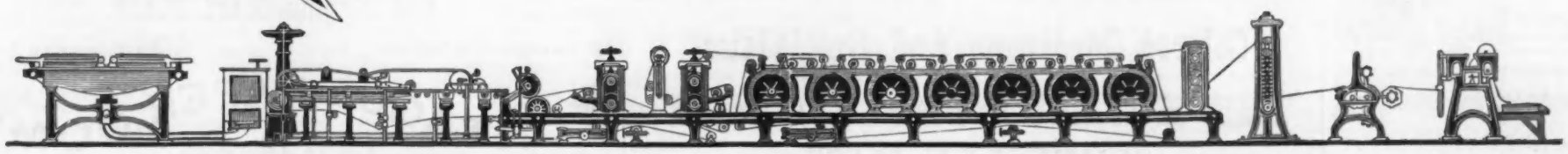
The Paper Trade Journal.



"The Consumption of Paper is the Measure of a People's Culture."

VOLUME X.—NO. 50. NEW YORK, DECEMBER 17, 1881. WHOLE NUMBER 398.

Trade Topics.

Letters Patent for Inventions.

By James A. Whitney, Counselor-at-Law.

VII.

WHAT CONSTITUTES A PATENTABLE INVENTION—(CONTINUED).

The truism that a principle cannot be patented relates, therefore, only to principles not appropriated to useful purposes; it does not apply to a principle embodied in the *modus operandi* of any amelioration of the useful arts.

The case of Boulton vs. Bull was the first in which was given a full definition of the term "manufacture" as used in the statute of monopolies. The general conclusions of the jurists of the day were evidently embodied in the opinion of Chief Justice Eyre: "It was admitted in the argument at the bar," said he, "that the word 'manufacture' in the statute was of broad signification; that it applied not only to things made, but to the practice of making, to principles carried into effect in a new manner, to new results of principles carried into practice." No general definition of the term "invention," or broader view of its synonym "new manufacture," exists than his further declaration, as follows: "Under things made we may class in the first place new compositions of things, such as manufactures in the ordinary sense of the word; secondly, all mechanical inventions, whether made to produce old or new effects, for a new piece of mechanism is certainly a thing made. Under the practice of making we may class all new artificial manners of operation with the hand, or with instruments in common use, new processes in any art producing effects useful to the public. When the effect produced is some new substance or composition of things, it should seem that the privilege of the sale, working or making, ought to be for such new substance or composition, without regard to the mechanism or process by which it has been produced, which, though perhaps also new, will be only useful as a new substance. . . . When the effect produced is no substance or composition of things, the patent can only be for the mechanism, if new mechanism is used, or for the process, if it be a new method of operating, with or without old mechanism by which the effect is produced." It has been already observed that this case, and others decided at about the same period, formulated the essential principles of the English practice, and it is worthy of note that this leading case established the patentability—as within the term "manufacture" of new substances and articles of manufacture, compositions of things, new artificial manners of operating, new processes in any art, and new methods of operating with or without old mechanism. This is an enumeration comprehensive enough to include the major subdivision of "invention" as understood at the present day.

The patentability of combinations was also admitted in the same suit, and eight years later, in 1803, Lord Ellenborough, in Huddart vs. Grimshaw, said: "I suppose it will not now be disputed that a new combination of old materials, so as to produce a new effect, may be the subject of a patent." This was extended in scope by Lord Eldon in Hill vs. Thompson in 1817, as follows: "There may be a valid patent for a new combination of materials previously in use for the same purpose, or for a new method of applying said materials."

Such, so far as concerns the subject matter, was the British law of patents, when it became the duty of American jurists to apply its principles in the administration of the American statutes. They followed it closely, softening its asperities, refining its distinctions, and elaborating its practice not less than its ethics into closer and clearer accord with great principles of national policy and individual justice.

In this country the statutory definition of patentable subject matter, although verbally varying in the several acts, has remained substantially the same from the beginning, and in substance is identical with that established by the English courts. The constitution was simply the terms "inventions or discoveries." The act of 1790 employs the words, "invented or discovered any useful art, manufacture, engine, machine or device, or any improvement therein not before known or used." This act was repealed by that of 1793, which substituted the phrase "any new and useful art, machine, manufacture or composition of matter." This act stood unrepealed until the passage of the act of 1836, but it was supplemented by that of 1800, in which the terms employed were "any invention, art or discovery," and "any new invention, discovery or improvement." The language of the act of 1836 includes "any new and useful art, machine, manufacture or composition of matter, or any new and useful improvement on any art, machine, manufacture or composition of matter." The supplemental act of 1842 added "designs for industrial products. These are the definitions contained in the act of 1861, and in the existing law, the act of 1870. The matter of designs, as partaking somewhat of the character of copyright, will be separately considered.

Apart from the above, the enumeration of subjects matter in the several statutes referred to is, in scope and intent, substantially uniform throughout. It is, however, practically only a subdivision into topical heads of the matter covered by the term "manufacture" in the statute of monopolies. Every variety of invention that could be protected under the latter term in the English practice has been protected under one or the other of the classes indicated in the American statutes. This naturally resulted from the fact that in the inception of the American system no precedents existed other than those of Great Britain and to these, in the absence of American authorities under accepted principles of practice, our judges necessarily turned.

The unimportant case of Rentzen vs. Ranows *et al.*, the first under the federal law, was tried in 1804, or nine years after Boulton vs. Bull had settled, in the rough, the governing principles of ethics and practice in patent causes. It was nine years later still before Marshall, *J.*, in Evans vs. Jordan, and Story, *J.*, in Whittemore vs. Cutter, first gave bent and direction to American patent jurisprudence, and the extent to which the British precedents and the reasoning of British judges was followed is manifest in all the decisions of that time. While, therefore, the subdivisions indicated in the statutes may be followed in the classification of the subjects matter for letters patent of the United States, English decisions, equally with those of our own courts, especially as relates to principles early decided, are applicable for all purposes of elucidation.

The Multifold Filter.

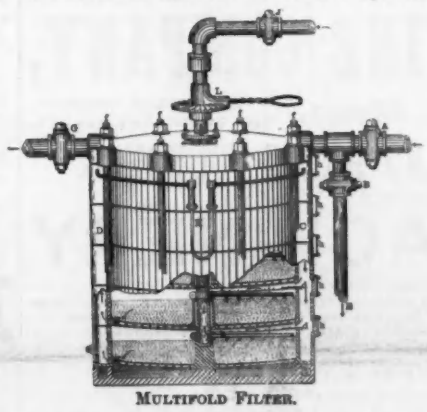
Herewith is given an illustration of a filter which the Newark Filtering Company is offering to paper makers and other manufacturers who use large quantities of water and who want that water as pure as possible.

The Multifold Filter has several new features, but its principle is that of the old sand bed, with improvements added as the result of several years' experience. It is constructed mainly of cast iron, and consists of a number of cylindrical compartments varying in depth from twelve to twenty-four inches, according to the quality of the water to be filtered and the degree of filtration required. Instead of several feet of sand underlaid by gravel, fine and coarse stones, the bed, for the filtration of ordinary water, is composed of ten inches of fine sharp sand, this depth of filtering material having been found by experience sufficient for the purpose. This sand is supported by a peculiar plate of heavy, corrugated and perforated brass, the slits being of that size which permits the passage of the water, but prevents the escape of the sand. By this means the amount of filtering material is reduced, space is economized, and the plate provides a proper support for the sand when it is being washed.

In operation, the water to be filtered passes through the valve A into the port C, and through the small ports to the surface of each bed, a portion to each, and then through the sand and perforated bottom through the port D and outlet G. The condition of the beds of sand is shown by a mercury gauge, K, which indicates the amount of resistance per square inch offered by the accumulation of silt. When this gauge indicates about four pounds, the bed should be washed.

The washing is effected by first closing the valves A and G and opening the valves J′ and B. The pipe shaft J and the radial pipes are then turned for a few minutes by means of the ratchet L. The water passes through the pipe J into the radial pipes and through the perforations with great force, on to and through the beds, thoroughly washing the sand and releasing the light silt, which, being in suspension, floats through C to the outlet E and passes off, while the sand sinks to the bottom. In this way, with little labor, the sand is kept clean and always in a condition for effective work. By this means, the large area required by the old method of filtration through beds of sand, is reduced to a minimum, and the area is further restricted by placing the beds one above the other, from three to ten sections high. This enables the manufacturer to place the filter in a mill or building where it will not take up a floor space of more than one three-hundredth part of the area required by the old style of sand bed.

This machine is very simply constructed, having only a few working parts. The interior pipes are of brass, and the iron parts are protected against corrosion. It will withstand a pressure of 125 pounds to the square inch, so that water may be forced through it under pressure for reservoirs, boilers, &c., or it may be used under a low head, as the resistance offered to the passage of the water through the sand and silt need not exceed three or four pounds to the square inch. For boiler use, where a heater is used, the filter should be placed between the heater and the boiler, so that any particles of lime, &c., precipitated by the heater, may be prevented from entering the boiler to form scale. Access to all parts of the interior of the filter is had through the hand-hole plates h. While the washing is taking place the process of filtering is not interrupted for a moment, except where a single filter is used, in which case the interruption lasts from three to four minutes. The consumption of water for this purpose need not exceed 1 per centum of the amount filtered. The office of the company is at Newark, N. J., and F. V. M. Hudson, 81 Reade street, New York, is the agent.



Multifold Filter.

Boiler Covering.

In steam generation the problem is to raise the feed water from a given temperature to 212°, and to carry it over the line to steam at some required pressure; every extra pound pressure necessitating a corresponding (although not exactly proportional) increase in temperature.* To raise one pound of feed water of 80° to steam at 75 lbs. on the gauge (or 90 lbs. absolute), which has a temperature of 320.2° F., and a volume of 4.79 cubic feet (or 298 times the volume of the feed water) necessitates adding 132° to bring it to the condition of water at 212° and 888.5°, which are rendered "latent;" or a total of 1020.5°.

Unfortunately, to put that many heat units into the water, we must waste many times that quantity, as so much is lost by the gases of combustion passing through the boiler without giving up to its contents even a large proportion of their heat, and again by the entire mass losing from external radiation.

While the first loss, through the chimney, is largely irreparable, even with the most approved "economizers," the latter—that from external radiation—may be almost entirely obviated by surrounding the boiler, steam pipes, and engine cylinder with a covering which is a poor conductor of heat.

The following figures, showing the results of certain tests, are of direct interest, as proving directly the economy of boiler covering and the waste of leaving boilers and pipes exposed to radiation and the cooling action of air currents.

Test No.....	1	2	3	4	5	6
On.....	Pipe.	Pipe.	Boiler.	Pipe.	Pipe.	Pipe.
Where.	A. Weber's.	Dunham, Buckley & Co.	H. K. & F. B. Thurber Co.	Wiley, Wickes & Wing.	Thurber's.	Beadleston & Woerz.
Steam pressure, lbs—						
At boiler.....	80	70	65	50	65	60
Temperature—						
On bare pipe.....	..	314°	..	..	255°	..
On bare boiler.....	..	..	280°	..	..	..
Surface of covering	78	104	110	104	84	95
1 in. from surface of covering	73½	102	100	82½	79	89
In shade out of doors	47	93½	65	65	65	64
Distance fr. boiler.	20ft.	10ft	on boiler.	1 ft.	60ft.	35ft

Carried steam at Weber's, 900 feet. Pressure at boiler, 75 pounds; at trap, 79 pounds.

Carried steam underground at Cheney's, 1,300 feet. Pressure at boiler, 40 pounds; at coil, 38 pounds.

Boiler of J. C. Provost—Banked fire with 45 pounds steam, and had 40 pounds in the morning.

* See tables of pressures and temperatures.

Shafting.

It is of the greatest importance that the shafting and all the members which go to form the transmission in a mill should be of the proper material, properly designed, proportioned, put up and cared for. At one time the most common material for shafting was cast-iron, but this has gone out of use, as being too heavy and weak, and lacking in uniformity of nature, &c. Wood was once largely used for large shafts, but is now confined to the axles of large vertical water-wheels, &c. Wrought iron, turned in ordinary or in special lathes, is now more used than any other material.

Turned shafting is, of course, subject to defects arising from the material from which it is made, as well as from the lack of skill, care or special appliances in producing it. If the material from which it is turned is not first-class, the surface of the shaft will be likely to show specks and flaws indicating that the interior is in the same condition, and that the shaft is not strong and homogeneous. It is very rare that shafting is not very nearly perfectly round at any one point in its length, but it is sometimes found to be of greater diameter at one end or in one place than at another, and more frequently it will be found that out of ten lengths there will be two or three different diameters, all professing to be exactly the same nominal diameter, and all intended to be just 1-16 inch scant of that nominal diameter. This difference in diameter between two lengths in a line gives rise to serious difficulties in coupling the lengths together into one continuous line.

It will be found that there are few kinds of shaft couplings that will take in and join two lengths of shafting that are not both of the same diameter, and generally that diameter must be absolutely that for which the coupling is made. Variations of 1-200 of an inch in diameter are very common, and difference of 1-100 inch are to be found in any large shop. The surface of turned shafting should be uniformly true and good throughout the entire length, so that pulleys can be fastened on at any point.

One fault that is very common in shafting coming from shops that have no special and first-class appliances for making shafting is that the lengths are not straight. They may be perfectly round, all of one size throughout their entire length, all of the lengths may be of the same diameter, but the lengths may be crooked. It is useless for the buyer of shafting to try to straighten it, for even if he succeeds in getting it into line as far as he can judge, there will be a strain upon the shaft itself, and upon the hangers and bents and the bearings of the pulleys driven from the shaft, which will work injury and consume power.

There is one great disadvantage inseparable from the manufacture of turned shafting, and and that is, that the very best and strongest portion is turned off. In any piece of wrought or of cast iron the skin is the life of the whole piece. In cast iron the skin is very much harder than any other portion of the piece, and in rolled iron the outside layers, having been subjected more to the condensing action of the rolls than the interior, are much more compact, dense and resistant. This strongest part, not having a good enough surface for the purpose of shafting, must be thus worked down so as to give the largest possible finished bar, known as turned shafting. Of course, there is the expense of turning, which must be borne by the purchaser, and the loss of a certain diameter and weight, which necessitates buying a larger bar. One step in the right direction which does away with the waste of time, metal and money in turning shafting, is to re-roll it cold, so that the surface is powerfully condensed and finished finely. The results of such an operation are that the shafting is much stronger for a given diameter, and each size is exactly what it represents itself to be. But there is one objection to cold rolled shafting for some circumstances, and that is that the interior of the bore is in such a condition of strain that, if any portion of this strain is removed, the whole bar is thrown out of shape. Thus if it is desired to key-seat or spline a length of cold rolled shafting for any great length (as for use in saw-mill carriages, &c.), the whole will spring into a bow, and, of course, be of no use for that purpose.

There is one step farther and in the right direction, and that is in the manufacture of hot-rolled iron shafting, in which the round iron bar, instead of being left with an ordinary surface which has to be re-rolled cold, or turned off, is subjected, while yet hot, to the finishing action of the burnishing-rolls or disks, which give it a fine surface, while at the same time it is condensed and made stronger for a given diameter, and perhaps for a given weight. In the process of manufacture it is usual to have a small quantity of water to play upon the finishing rolls, and to keep things cool, and the effect of this is to make a small quantity of steam, which oxidizes the surface of the shafting and forms the rust-proof coating of oxide of iron which is very sightly and useful. Hot-rolled shafting is capable of being key-seated the same as the turned. The thin film of the oxide of iron which covers the surface is the most effectual protection against rust that is known. It corresponds to the coating put on by the process known as "Barffing," invented by Professor Barff for the protection of ornamental objects of iron work, except that the Barff process consists in subjecting the objects to the exposure in a chamber containing superheated steam at high pressure and temperature. This film is not only not destroyed by oxygen, but is not removable by ordinary abrasion.

We have considered, so far, the materials ordinarily employed, and have mentioned only those shafts in which the material is disposed in a solid form. Where great stiffness and lightness are demanded in the shaft, it should be tubular, because the same weight of metal disposed in a tubular form is very much stiffer to resist lateral bending than if put in solid, and when it comes to resisting torsion or twisting, you can readily see that a plate of iron a quarter of an inch thick and a foot wide will resist twisting better if disposed in the form of a ring or tube than if coiled up solid into a bar. The nearer metal is to the centre of a shaft, the less is its power to resist either springing or twisting. This does not mean that a 2¼-inch tubular shaft will be as stiff and as strong as a 2¼-inch solid shafting; but if the same weight of metal was disposed in a tubular form it would be stiffer and stronger than if rolled up solid. The lighter a shaft is, other things being equal, the weaker it is; that is, the less horse-power it can transmit and the more it will spring by its own weight, by the weight of the couplings and pulleys upon it, and by the strain of gears or the pull of belts.

But there is one thing about shafting. A shaft of half the weight, running at twice the speed, will transmit just the same amount of power as one of full weight and slow speed. There is, then, an actual economy built up of many items resulting from the use of shafting of small diameter running at high speed. First, there is economy in the purchase of the shafting itself; second, a saving in the couplings, which will, of course, be of smaller size; third, the hangers and other supports can be lighter; fourth, the pulleys, transmitting a given power at high speed, will be lighter than those transmitting the same power at a slow speed; fifth, the belts, traveling at a high speed to carry off a given horse-power, will be lighter than would be required from a slow running shaft; sixth, the flooring required to support a light run of transmitting mechanism may be made lighter than where it has greater weight hung to it or supported by it from below; seventh, modern machinery, being most of it of high speed, will need less counter shafting to speed from a high speed shaft than from a slow running line.

As regards the distance between hangers, that is a question concerning which no rule can well be laid down. As a general thing, hangers are placed too far apart. The disadvantage of having a great distance between hangers is that the shafting, no matter how strong and stiff, will sag of its own weight, and secondly, every time that it makes a revolution, every part of this mass, and especially those portions which lie near the surface, becomes subjected to a wrenching motion tending to weaken the shaft, while at the same time this constant pounding consumes power.

If you wanted an inch and a quarter shaft hung sixteen feet between hangers, and was told to bend it a quarter of an inch out of true, 175 times a minute, you would conclude that you would have to rig up some especial jigging machine with a good broad belt to it in order to do this; and yet, whenever you drive a line of shafting too wide between hangers, especially if it is loaded with heavy pulleys and pulled upon by powerful machines below it, you are wasting just as much power as your jigging machine would require to drive it.

The driving belt would have to be extra wide in order to drive a line of sagging shaft. This difficulty with shafting is increased by the sagging of the floor or other supports to which the hangers are attached. Hangers may be placed so close together that the shafting will spring very little between them. But if a heavy machine is put on the floor directly above one of these hangers, it will be seen that the line of shafting must be somewhat sagged by the springing of the floor, and more power will be consumed to drive it than before. These are facts which are not only self-evident, but have been

proved time and time again by the indicator and the friction brake. As regards the bearings of shafting, they can hardly be made too long. A two-inch shaft should not have less than seven-inch bearings, although only first-class establishments turn out hangers having any such length of bearing surface.

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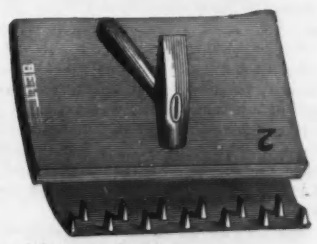

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[FROM OUR REGULAR CORRESPONDENT.]

HOLYOKE, Mass., December 15, 1881.

Business continues brisk, just as it has been for so many months, and the prospect is good for the opening of the New Year. The mills are nearly all crowded with orders at about the usual prices, and all are making every pound of paper possible to fill all of the orders they can before the 1st of January. If the country has been using paper as fast as it has been made the past year there is no reason to fear any break in the trade for another year, since there is a fair prospect for a good general business, besides the natural increase in population. A good demand for paper means a continuation of the present scale of prices, and it is a good thing for both manufacturers and dealers to have uniform prices rule for so long a time.

The rise in stock which was prophesied by the rag dealers has failed to appear, and now that the mills have generally stopped buying until after the January inventory, there will be slight chance for any present increase in prices. The anticipated rise was to be partly caused by higher freight rates, but these have not yet come, though they are liable to at any time. This market has been very short of bleaching powders for a few weeks, owing to the slow trips of the steamers across the Atlantic. The price has thus advanced a little to those who have not had advance contracts.

The affairs of the Massachusetts Paper Company have taken another curious turn this week, but it is just as uncertain as ever how they are coming out. At the creditors' meeting on the 8th a deficiency of $58,044 between the assets and liabilities was reported. But the expert who had been examining the books continued his investigations, and told a creditor a few days after that there was, after all, no such deficiency. This shows some remarkable book-keeping, at any rate. The public were told also that Mr. Cline had drawn $47,000 and Mr. Hunt $12,040 from the concern besides their salaries, but now both men claim that they have made no overdrafts, and that the books, if properly kept, would not show even the small deficiencies of $4,700 and $1,204, which were reported at the meeting.

We had a curious political overturning the other day. At the recent city election the returns made one candidate mayor by a majority of five. The defeated man asked for a recount, and the aldermen spent several hours over the ballots and announced the other candidate elected by three majority. This is a bad result for the city, not because of the political faith of the mayor elect, by any means, but because his opponent was the better man; but probably we shall make just as much paper and get just as good a price for it. Whoever is mayor the city must be cleaned up or we shall continue to have disease. The small-pox is not yet eradicated. Three cases were reported on Tuesday from the house in which the wake was held over the body of a small-pox patient, one of the new cases being the mother of the woman who was waked. Two of the pest-house patients died on Monday. This is the worst time of year for this disease to begin, for it would be easier to stop it in warm weather. There have now been twenty-two cases, thirteen of which have been fatal. But the small-pox is not confined to Holyoke, and so many other places have it that it is not at all singular that it has broken out here, and it would not be singular if there was not a paper mill in the city. Holyoke is most favorably situated, and should be by nature very healthy. The soil is excellent, and there is abundant opportunity for thorough drainage; but the population has increased so fast that public improvements have not been able to keep up with it, and part of the city is not properly drained. This matter of sewerage is being talked up now as its importance deserves, and whoever is mayor the coming year will be forced by public opinion to use his influence with the aldermen to spend more than the usual amount of money in making the city safe in this respect.

As the Holyoke water-power comes to be taken up by our fast increasing industries, the use of steam will come in more and more, both for new enterprises and for helping out the water-power in the old establishments. Thus the Parsons Paper Company is beginning the erection of an additional building, 20 by 30 feet in size, to contain two steam engines to run the paper machines. This is coming to be a favorite way of using steam in paper mills, and the makers of steam engines have no doubt plenty of business in Holyoke in the future.

This city is turning out, probably, some of the best steam pumps in the world, as the Deane pump is coming to be recognized. The company manufacturing it is overcrowded with orders, although it has several times enlarged its plant within the past two years. The concern recently shipped to Indiana probably the largest steam pump ever made. It is to be used on a barge on the Mississippi River to wash off the abrupt banks and improve the channel for steamboats. It has a capacity of 2,000 gallons a minute, the plunger and air-pump are each 16 inches in diameter and the stroke is 24 inches. The framework is 7 by 30 feet long, and the whole weighs thirty tons; and the entire machine was built in eighty-eight days from the first drawings.

White & Adams have started three machines in their ruling and finishing works in their new quarters at the Syms & Dudley Paper Mill, and will soon have several more in operation. H.

P. S.—December 16.—The creditors of the Massachusetts Paper Company have instructed Mr. Cline to file his petition in insolvency immediately, although some of them believe that they will get nothing thereby. At the meeting yesterday Mr. Cline talked about paying 10 per cent., but closed his remarks by saying: "Now, if I deserve hanging, hang me." H.

Obituary.

JOHN W. FORNEY.

Colonel John W. Forney died at his residence in Philadelphia, on Friday last. Colonel Forney was born at Lancaster, Pa., September 30, 1817. When thirteen years old he was forced to abandon his studies in the common school and earn his own bread. He first entered a store, but three years later (in 1833) he became an apprentice in the Lancaster *Journal* office. There he excelled at the case, was accurate as a proof-reader, and exhibited a striking brilliancy in his first essays in editorial writing. In 1837 he bought a share in the *Intelligencer*, and three years later that newspaper was combined with the *Journal*. During the presidential campaign of 1844 he published a campaign journal called the *Plaindealer*, and in 1848 President Polk rewarded him with the post of Deputy Surveyor of the Port of Philadelphia. Colonel Forney at this time sold out his interest in the Lancaster *Journal* and purchased a half interest in the *Pennsylvanian*.

In 1851 he resigned his editorship of the *Pennsylvanian*, and from that time until 1855 he was Clerk of the House of Representatives at Washington. At this time Colonel Forney was one of the most influential and conspicuous of the politicians in Washington, and the record he had made and the power he had acquired in the House was strengthened by his purchase of the Washington *Union*, the acknowledged organ of President Pierce's administration. On August 1, 1857, he issued the first number of the Philadelphia *Press*. In 1859 he was again elected clerk of the house.

In 1863 he started *The Washington Chronicle* as a Sunday journal, and in 1865 it became a daily publication and was soon recognized as the organ of the National Government. In 1861 Colonel Forney was elected Secretary of the Senate, a position which he held until 1868. A brief holiday in Europe after the war resulted in a series of letters to *The Press* and *Chronicle*, and these were published in 1867 in a volume called "Letters from Europe." Returning to his editorial chair he began the publication of a series of "Anecdotes of Public Men," for which his intimate connection with leading men for so many years had furnished him with abundant and entertaining material. These anecdotes were afterward collected into two volumes. Colonel Forney disposed of his interest in *The Chronicle*, in 1870, and of his interest in *The Sunday Press*, in 1874, and in 1877 he severed his connection with *The Daily Press*. In 1874 or 1875 he again sailed for Europe, where he rendered valuable service as a volunteer Centennial Commissioner. On his return, in 1876, he published a book called "A Centennial Commissioner in England." In 1877 he again went abroad. *The Progress*, a weekly literary journal, was established by him in 1878, and in its columns his novel, "The New Nobility," first appeared as a serial.

Colonel Forney was impulsive and generous to a fault, and his deeds of private benevolence were many. He leaves a widow, two sons, Lieutenant-Colonel James Forney, of the marines, and John W. Forney, Jr., journalist, and three daughters, one of whom is Mrs. W. W. Weigley.

At a meeting of representatives of the Philadelphia newspaper press, held on Monday, resolutions expressive of their feeling were adopted.

Accidents.

Thomas Rae, a machine tender at the Whiting paper mill No. 2, Holyoke, had the forefinger of his right hand crushed by getting it caught in a fan pump.

On Monday morning Joseph Morgan, employed in the paper mills at Front and Elm streets, Camden, N. J., as engineer, was severely burned about his hands and other parts of his body while attending to his duties.

Wm. McCarthy, overseer at the Whiting paper mill No. 2, Holyoke, had his hand caught, bruised and scorched by a calender roller.

A workman at the Connecticut River pulp mill, Holyoke, narrowly escaped being blown up last week. He removed the cap from a digester instead of opening the steam escape. A large quantity of pulp was plastered over the ceiling of the room.

Charles West, formerly a machine tender at the Chemical paper mill, Holyoke, met with an accident in the Montague paper mill, at Turners Falls, recently. While he was attending to his duties he was caught by a large belt and hurled against a machine and bruised very seriously.

Personals.

T. Embury, of Perry & Embury, booksellers, &c., Napanee, Ont., is dead.

George Marshall, of Turners Falls, Mass., left here on Thursday to attend the Atlanta Cotton Exposition.

Gilbert H. Peck went West last week for Perkins, Goodwin & Co., and makes a very favorable showing in his new connection.

James Green, late overseer of the "platers" in Beebe & Holbrook's paper mill, Holyoke, has exchanged his position for a better one in a paper mill at Turners Falls. He now superintends the finishing of all the news paper, which is shipped to New York.

General Notes.

Samuel Raynor & Co. have received an order from Washington for a quantity of envelopes about two feet square in size and to be made of XXXX manilla paper.

The Stationers' Board of Trade will have a special meeting of its trustees next week to decide upon the question of the annual dinner. The annual business meeting occurs on Tuesday, January 3.

The *Belgian Star* of Brussels, Belgium, under date of November 22, has the following: "The celebrated chief of the house, John Peiffer, has been condemned by the court in Gand to seven years in State prison, viz.: Two years for simple bankruptcy and five for fraudulent bankruptcy. The *Journal* of Ghent applauds for the severe punishment. A great many honest people have been swindled lately by just such rascals, and it is great time it should stop." An appeal from this judgment has been taken.

The steamer City of London has now been out thirty-six days from London, having sailed November 11, and fears are entertained that she has been lost. She has on board 800 or 900 tons of rags and other paper stock, consigned, among others, to Horwitz & Neustadt, Lee & Sturges, R. B. Briggs and Kendall Brothers. The bark Anna from Pillau for this port, having on board, among other cargo, about 250 tons of Königsberg Linens consigned to various shippers here, is reported to be lost. Her crew was rescued and brought to this port by the steamer Canada on Wednesday. All of the rags by these two vessels are said to be covered by insurance.

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38 & 40 Hawley St., BOSTON, Mass.,
MANUFACTURERS OF
WOOD PULP
—AND—
Chemical Cardboard
—ALL COLORS.—
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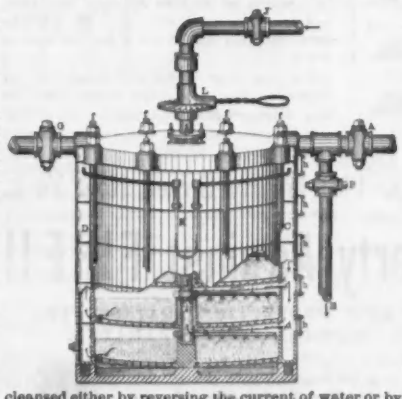
EWARTS DETACHABLE CHAIN.
STEWART & CO.,
No. 125 North Third St.,
PHILADELPHIA.
Well adapted for various kinds of Paper Machinery.
THIS CHAIN IS MANUFACTURED OF MALLEABLE IRON AND THOROUGHLY TESTED.

THE MULTIFOLD FILTER.
The greatest possible filtering surface in a given space. Adapted to all locations and conditions. Will filter the water supply of the largest cities, and of paper mills, steam boilers, &c.



THE MULTIFOLD FILTER
Is constructed mainly of cast iron, and consists of a number of cylindrical compartments, varying in depth from twelve to twenty-four inches, containing ten or more inches of sand, according to the quality of the water to be filtered, and the degree of filtration required. We are, therefore, able, on the same ground space, to furnish from three to ten times as much filtering surface as other manufacturers, and our prices, are, therefore, for a given filtering capacity, proportionately less.
This Filter may be used under a heavy pressure, such as is necessary to force water into high reservoir boilers, &c., or under a natural head, as low as eight or ten feet. The pipe shaft and radial arms are made of brass, and the iron compartments are bituminized, to prevent corrosion. The operation of washing or cleansing the filter beds is effected by means of traveling jets of water.
The most perfect, rapid and least expensive means of cleansing filter beds.
While the washing is taking place the process of filtering is not interrupted for a moment, except where a single filter is used, in which case the interruption lasts from three to four minutes. The consumption of water for this purpose need not exceed one per centum of the amount filtered.
All other filters, of whatever construction, are cleansed either by reversing the current of water or by removing the filtering material. The first-mentioned process only partially accomplishes the object, and the other involves so great an amount of labor and expense (besides its impracticability), as to preclude its general adoption. The frequency and facility with which the "MULTIFOLD" FILTER can be cleansed, insures at all times a perfect filtration.
Our Patents give us a monopoly of the arrangement and operation of the apparatus described.
The sizes we are at present prepared to furnish are: 20, 40, 50 and 96 inches diameter, and from three to ten sections high. ☞ Prices will be furnished on application.
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Represented by F. V. M. HUDSON, 81 Reade St., N. Y. 177 Commerce Street, Newark, N. J.

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—AND—
Rotary Bleaching Boilers.
Those who have unsafe Rotary Boilers in use can exchange them for the Loring Patent Rotary, and can be furnished with abundant evidence that the Loring Boiler is absolutely safe, and the only safe Rotary Bleaching Boiler in use. For the production of chemically prepared wood-pulp it has been found extremely difficult to make a boiler that would remain absolutely tight for any considerable length of time. I have accomplished this result by adopting modes of construction far in advance of the best methods for producing first class boiler work, in combination with substances and methods entirely independent of boiler work, and only known to myself. I invite special inquiries in regard to my patent WOOD-PULP BOILERS, patent STRAW-PULP BOILERS, and Rotary Bleaching Boilers; also to my patent process for extracting water from wood and straw pulp, and to my improved Fibre or Drainer Tanks, and Fibre Valves. The common steam boilers built by the undersigned have proved more durable and safer than those of any other manufacturer in the United States. Steam boilers, now in good condition, that have been in constant use twenty-eight years, can still be seen in use in Boston. Not one of the many thousand boilers, varying in weight from one-half to forty tons, has ever exploded or given out, to cause injury to a single person or to one dollar's worth of property, during the twenty-eight years.
HARRISON LORING, Boston, Mass.
NOTICE.—I have been informed that irresponsible boiler-makers have offered to build Rotary Boilers with whole wrought-iron heads and a hollow journal, which would be an infringement of my patent. Such boilers will be made by the undersigned at low prices—having special tools for the work—and no extra charge made for the patent right, which would have to be paid by the user if made by an unauthorized person.
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WINONA PAPER COMP'Y,
Holyoke, Mass., U. S. A.,
—MANUFACTURER OF—
Extra Fine, Animal-Sized, Flat and Envelope Papers,
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WHITE AND TINTED SUPER-CALENDERED
BOOK PAPER.
The "Model" mill, constructed on plan of a hollow square, with the largest engine producing capacity of any single machine mill yet built.
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ANTI-CHLORINE. SUPERIOR to any other Anti-Chlore in use. It is a very fine white powder, wholly unobjectionable to the most fastidious manufacturer. Adapted to fine Ledger and Writing Papers, Common Book or News, sized or unsized.
☞ For Particulars, send to the Manufacturers for Descriptive Circular.
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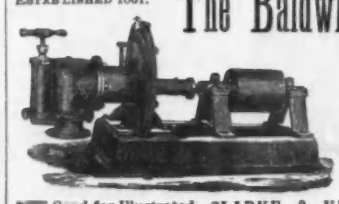
☞ REMOVAL. ☜
ESTABLISHED 1861.
The Baldwinsville Centrifugal Pump Works.



IN order to give our patrons the benefits of superior shipping facilities, we have removed our works to Syracuse, N. Y., where we will continue to manufacture
THE OLD RELIABLE CENTRIFUGAL PUMPS,
which are THE BEST for Paper and Pulp Makers.
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CHILLED ROLLS GUARANTEED EQUAL TO ANY MADE.
Plans and Estimates furnished, and special attention given to the execution of contracts for the entire machinery necessary to make any kind of Paper, set up, ready to run.
Calenders and Press Rolls reground by special machinery.
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OF GOOD QUALITY, AT THE

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Trade *J. J. C.* Mark.

Linen, Cotton and Woolen

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Carefully and Cleanly Assorted.

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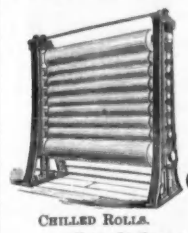

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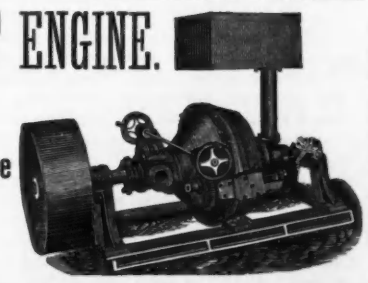

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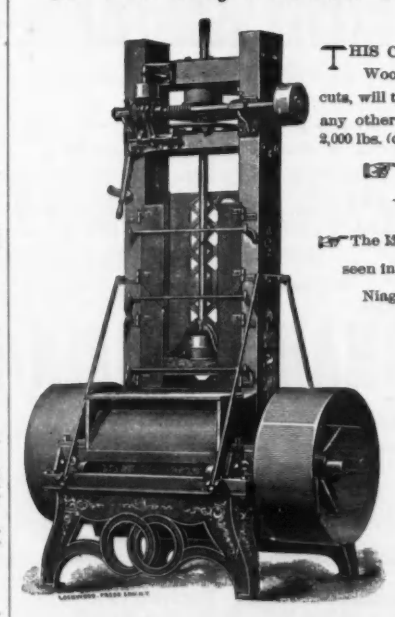
☞ The Only Machine Using Emery Grinders. ☜



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☞ MACHINES FURNISHED ON SHORT NOTICE.

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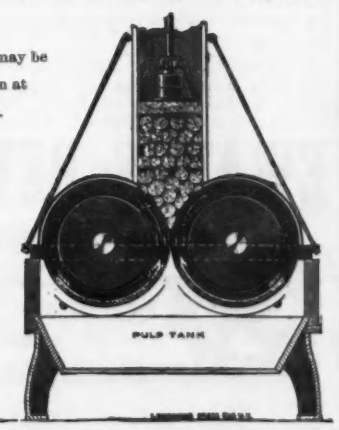

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January, 1881

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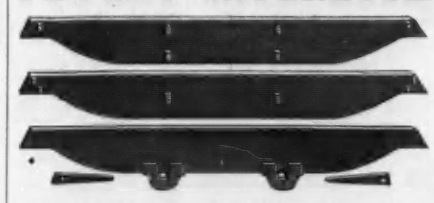

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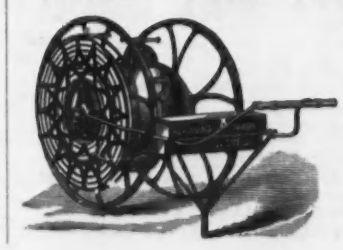

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Supt. of Middleburg Paper Mills.

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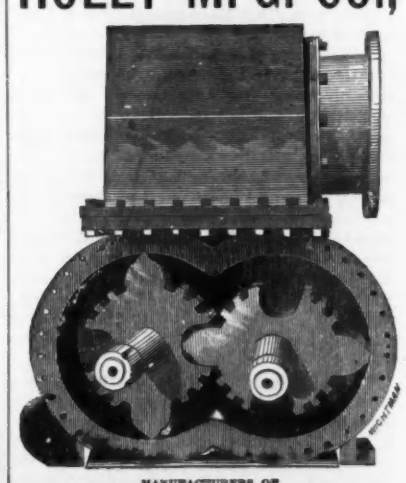

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It is quick and positive in its working, and not liable to get out of order. It has an adjustable speed arrangement by means of which the speed of the wheel may be varied, and a self-acting stop motion which stops the action of the Governor when the gate is entirely raised or closed, so there is no liability of strain, or breaking of gears.

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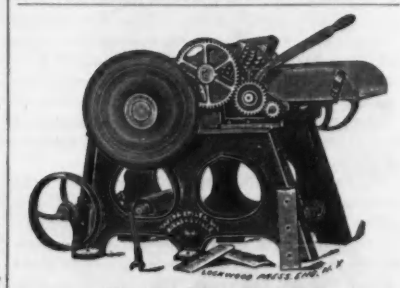

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They are the most durable, have greater capacity, take less power, and are the cheapest cutters in the market. Estimates and full description furnished on application. Manufacturers of the **Angle Bed Plates,** Roll Bars (steel laid or all steel), Trimming Knives and Paper Mill Knives of every description.

TAYLOR, STILES & CO.,

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CLEVELAND WIRE WORKS,

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DIRECTORY.

Cards under this heading will be charged for at rate of $15 per annum for each card.

NEW YORK HOUSES.

Jute Butt Brokers.

CABOT, BOWLES & CO., 81 Water st.

CROCKER, HENRY H., & CO., 134 Pearl st., N. Y.

DALAND, WILLIAM S., 124 Water st., N. Y.

COHEN, PHILIP I., & Co., 105 Water st. Special attention paid to buyers' interests in purchasing and shipping.

TUCKERMAN, G., 72 Beaver st., N. Y.

Note Broker.

COLBY, C. A., Buys and Sells Notes of Paper Manufacturers and Dealers, 22 Nassau st., N. Y.

Paper and Paper Makers' Supplies.

BARRETT, THOMAS 78 Duane st., N. Y.

BELDEN, M. B., Straw, Manilla and Rag Paper, 45 Dey st., N. Y.

BUTLER & JOHNSON, Dealers in Paper, 44 Beekman st., N. Y.

CLARK, C. C., Paper and Mill Supplies, 85 Cliff St., New York.

HEWITT, C. B., & BRO., 48 Beekman st.

HUBBS & LAMB, 36 Beekman st., N. Y.

HULBERT, H. C., & CO., 53 Beekman st.

LYON, N. C., Jr., 45 Ann st., N. Y.

MURPHY, JOHN J., 47 John and 5 Dutch sts.

PERKINS & GOODWIN, 84 Duane st.

SIMPSON & WRIGHT, 201 William st., N. Y.

WATSON, GEORGE, Jr., 63 Beekman st.

Paper Makers.

HAND & ELSWORTH, White and Colored Tissue and Copying Paper, at Peekskill, N. Y. Paper Warehouse and office, 51 Beekman st., N. Y.

ORRS & CO., Printing and Hanging Mills at Troy. Roll Papers a Specialty. Office, 39 Park Row, N.Y.

YOUNG, PETER, Manufacturer of Manilla and Wrapping Paper, also dealer in Rags and Paper Stock. Mill and office, 7 and 9 Elm st., N. Y.

Paper Makers' Chemicals and Colors.

HELLER & MERZ, Ultramarine, 55 Maiden lane, N.Y.

RIKER, J. L. & D. S., 45 Cedar st.

SERGEANT BROS., 78 William st., N. Y.

Paper Stock Brokers.

BARTOW, THEO., & SONS, Jute Butts and China Clay 54 Pine st., N. Y.

BEEBE, IRA L., 44 and 46 Duane st., N Y.

HAWKINS, W. F., Broker in Rags, Paper Stock, and Chemicals, 62 Duane st., New York

Printed Wrapping Paper.

NUGENT & STEVES. Also Paper Bags and Boxes. 538 and 540 Pearl st., N. Y.

Rags and Paper Stock.

ATTERBURY BROS., 253 and 255 Front st.

BRIGGS, R. B., 12 Reade st.

BUCHANAN, M. T., 263 Front st.

COHN, LAZARUS & CO., 253 Pearl st., N. Y.

CORRIGAN, PATRICK, 700 Second avenue, N. Y.

DALY, DANIEL, 366 Water st., N. Y.

DAMERY, JAMES, 277 Water st., N. Y.

EVANS, T. J., N. W. Corner Frankfort and William sts., N. Y.

FITZGERALD, JAMES M., & CO., Paper and Paper Stock, 137 South Fifth ave., N. Y.

FLYNN BROS., 61 Congress St., S. Brooklyn, N. Y.

GILDEA, PATRICK, 445 and 447 West 13th st.

HARLEY, GEORGE, 362, 365 and 367 Third st., N. Y.

HENNESEY, JAS., 10 and 12 Reade st., N. Y. Warehouse, 253 Fourth st., Brooklyn.

KEENAN'S, OWEN, SON, Established 1840. 448 Pearl st., N. Y.

KENDALL BROS., Morse Building, 140 Nassau st., N.Y.

LIBMANN, JOSEPH, & CO., New Rags a Specialty. 3 Howard st., N. Y.

LOEWENTHAL & MORGANSTERN, 21 Beekman st., N. Y.

LOEWENTHAL BROS., 214 Pearl st., N. Y.

LYON, JAMES M., Agent, 534 Pearl st., N. Y.

LYON, J. W., & CO., 35 Park st.

MAHARIN, M. A., Metals, 513 Washington st.

McGINNIS, HUGH, Dealer in Cotton & Woolen Rags, Paper Stock & Old Metals, 59 & 61 Spring st., N. Y.

McQUADE, ARTHUR J., 535 & 537 E. 13th st., N. Y.

O'MEARA, M., 27 Centre st.

SAVAGE, JAMES, Jr., 386 & 388 Seventh ave., N. Y.

SERGEANT BROS., 78 William st., N. Y.

SHEA, JAMES, Cotton and Woolen Rags, 65 Park st.

SMITH, JAMES F., Jute Waste a Specialty, 36 Peck slip, N. Y.

SMITH, THOMAS, 30 Hester st.

SOULS, WM., & CO., 392 Hudson st., N. Y.

WARD, OWEN, 448 & 450 West 39th st.

WELDON, P. & T., Dealers in Cotton and Woolen Rags, 112 & 114 Navy st., Brooklyn, N. Y.

Straw Boards.

BUTTERFIELD, H. A., 548 Pearl st., near Broadway.

FITZGIBBONS, MESSER & CO., Mfrs. Straw Boards, Manilla Pulp Lined Bds., News & Lining Paper, Liners of Straw Bds. by Patent Mach'y, 63, 65 & 67 Crosby st.

HAYES, JAMES E., & CO., 75 Duane st.

Wire Cloth.

LANG, MARIUS, Importer of Wire Cloth, 94 Bleecker st., N. Y.

OUT OF TOWN HOUSES.

Binders' Boards.

SHEEDER, J. FRED., Mfr. of Album, Binders' Trunk and Button Boards, Kimberton, Pa.

BARBER, J. & J. S., Paper Stock and Binders' Boards, 621 and 623 Commerce st., Philadelphia, Pa.

Book Binders' and Paper Box Makers' Materials.

SNIDER & HOOLE, Cincinnati, O., and Chicago, Ill.

Cuts for Printers of Wrapping Paper, Flour Sacks, Etc.

ZEESE, A., & Co., 155 & 157 Dearborn st., Chicago, Ill.

Dandy Roll Manufacturers.

BUCHANAN, BOLT & CO., Holyoke, Mass.

CHENEY BIGELOW WIRE WORKS, Springfield, Mass. Pat. Seamless Wove and Laid Dandy Rolls.

Paper Cutters.

HOWARD IRON WORKS, Buffalo, N. Y.

Paper Makers' Chemicals and Colors.

BLANCHARD, J. HENRY, Chemicals and Wood Pulp, 103 Milk st., Boston, Mass.

MITCHELL, WM. H., 43 N. Front st., Philadelphia.

Paper and Paper Makers' Supplies.

BOYNTON, G. E., Paper and Twine, 37 Eddy st., Providence, R. I.

Paper Manufacturers.

JERSEY CITY PAPER CO., White and Colored Tissue & Manilla Wrapping, 211 Wayne st., Jersey City, N.J.

SCOTT PAPER CO. (Limited), 27 N. 6th st., Philadelphia. Flour Sack, Building and other Manilla Papers.

Paper Making Machinery.

EMORY, P. P., & CO., Mfg. of Water Filter Lock Valve, Springfield, Mass

HOLYOKE STEAM BOILER WORKS, Manufacturer of Steam Boilers (B. F. MULLIN), Holyoke, Mass.

SMITH, WINCHESTER & CO., South Windham, Ct.

THE SIBLEY MACHINE CO., Norwich, Conn.

Rags, Paper and Paper Stock.

BULKLEY & CO. (Late with J. G. Ditman & Co.), 124 North Sixth Street, Philadelphia.

BUTLER, THOMAS, Cotton and Woolen Rags, Iron and Metals. 249 Causeway st., Boston, Mass.

CHEEVERS, JAS., Paper Stock and Woolen Rags, 205 Causeway St., Boston, Mass.

CLAFLIN, C. J., & CO., Dealers in Cotton Waste, Providence, R. I.

DICKINSON & CO., Cotton & Woolen Rags, New Haven, Conn.

DICKINSON & MAYO, Cotton Rags and Paper Stock, Springfield, Mass.

ELLIOT, A. G., Paper and Paper Stock, 727 Chestnut and 726 Jayne sts., Philadelphia.

B. FELSENTHAL & BROS., Paper, Bags, Twine, Woolen & Cotton Rags, 156-160 S. Desplaines st., Chicago.

FOLLANSBEE, TYLER & CO., 124 and 126 Quincy st., Chicago, Ill. Refer to J. W. Butler Paper Co.

GARVAN, P., Paper & Paper Stock, Hartford, Conn.

GILBERT, WM., & CO., Paper and Woolen Mfrs.' Materials. 11 and 13 Market st., Chicago, Ill.

GRAHAM PAPER CO., Paper Warehouse and Stock Dealers. 217 and 219 No. Main st., St. Louis, Mo.

HARRIS, M., & BROS., 403 & 405 Fifth ave., Chicago, Ill. Branch Houses: Dubuque, Ia.; Burlington, Ia.

HUBLEY & CO., Rags and Paper Stock, Worcester, Mass.

LANEY, JAMES, & CO., Dealer in Paper and Paper Stock, Cotton and Woolen Rags, Rochester, N. Y.

MASSACHUSETTS PAPER CO., Paper and Paper Stock, Springfield, Mass.

McARDLE & HART. 355 West st., N. Y., and Newburg, N. Y.

McKEON, P. & J., Dealers in Woolen & Cotton Rags, &c. 205 and 207 North Second st., Brooklyn, E. D.

PEARL, HENRY W., Paper and Paper Stock, Springfield, Mass.

RICHMOND & CO., F. H., Paper and Paper Stock Warehouse, Cotton Waste Dealers, Providence, R. I.

RING, M. A., & SONS, 363 Atlantic ave. and 20 Purchase st., Boston, and 139 No. Front st., Phila.

SIMMONS, JOHN, Wholesale Dealer in Paper and Rags, 20 and 22 Decatur st., Philadelphia.

SNIDER'S, LOUIS, SONS, Manufacturers and Wholesale Paper Dealers. 121 Walnut st., Cincinnati, O.

UNION WADDING CO., Manufacturers and Dealers in Cotton Waste and Paper Stock, Providence, R. I.

Screen Plate Manufacturers and Repairers.

ANNANDALE SCREEN PLATE CO., Repairing Old Plates a Specialty. P. O. Box 309, Paterson, N. J.

ASHMUN SCREEN PLATE CO., Old Plates renewed charges moderate. P. O. Box 210, Paterson, N. J.

JUDSON, HOWARD, 127 and 129 N. J. R. R. ave., Newark, N. J. New Patent Screen Plates.

Straw Boards.

PINKHAM, T., Agent for Androscoggin Pulp Co.'s White Box Boards and Ashland Leather Board, 24 Friend and 52 Elm streets, Boston, Mass.

Straw Boards and Straw Wrapping.

TUCKER'S, E., SONS, Straw Boards, Paper, Twines, Paper-Box Mach'y, 100 Trumbull st., Hartford, Ct.

Twine.

BOSTON CORDAGE CO., Boston.—Sisal Twines for Paper and Pulp Mfrs. a Specialty. C'spondence Solicited.

FOREIGN HOUSES.

Rags and Paper Stock.

WALKER, J. R., Dealer in Paper Stock, Woolen Rags and Scrap Metals, 30 and 34 Foundling st., Montreal.

IMPORTATIONS OF PAPER STOCK, PAPER, BOOKS, CHEMICALS, &c.

IMPORTS of Paper and Paper Materials, Books, &c., at the Port of New York, for the week ended Dec. 9, 1881. Quantity given in packages when not otherwise specified.

Aniline Colors	90	$10 227
Alum	—	—
Aluminous Cake	—	—
Bleaching Powders	305	3,275
Soda Ash	857	10,199
Soda, Bicarb	—	—
Soda, Caustic	225	3,284
Soda, Sal	—	—
Ultramarine	2	285
Books	302	30,846
Newspapers	94	3,816
Engravings	24	5,200
Ink	15	1,244
Lead Pencils	12	1,911
Paper	75	8,346
Steel Pens	4	1,421
Stationery	7	688
Slate Pencils	1	52
Clay	—	—
Jute Butts	3,196	19.667
Jute Rejects and Cuttings	—	—
Paper Hangings	2	217
Paper Stock	2,683	50,163
Terra Alba	—	1,306
Waste	26	2,398
Totals	7,920	$154,595

TOTAL IMPORTS.

General Merchandise, for the week ended December 9, 1881	$5,786,535
Paper, Paper Stock, &c.—	
For the year ended May 23, 1873	15,074,825
For the year ended May 22, 1874	12,150,855
For the year ended May 21, 1875	13,292,891
For the year ended May 26, 1876	11,293,408
For the year ended May 25, 1877	9,627,694
For the year ended May 24, 1878	10,246,413
For the year ended May 23, 1879	9,561,091
For the year ended May 21, 1880	13,549,975
For the year ended May 27, 1881	14,379,508
For quarter ended Aug. 26, 1881	2,844,838
For quarter ended Nov. 25, 1881	3,356,684
For the week ended Dec. 2, 1881	185,800

IMPORTS of Rags and other Paper Stock at the Port of New York, since Jan. 1, 1881, from the following Ports, showing Quantities from each Port.

	Rags. Bales.	*Old Papers.* Bales.	*Manillas.* Bales.
Algeria	—	—	1,519
Alexandria	4,026	—	—
Antwerp	4,145	946	2,384
Beyrout	404	—	—
Bremen	1,907	488	499
Bristol	—	798	318
Bordeaux	44	—	—
Cadiz	22	—	—
Calcutta	3,299	97	204
Campeachy	4	—	—
Canary Islands	24	—	—
Cardiff	—	—	701
Catania	338	—	—
Copenhagen	614	—	—
Dublin	—	32	—
Dundee	4,112	2,825	10,768
Edinburgh	240	96	210
Genoa	1,485	—	112
Glasgow	3,436	5,731	455
Gothenberg	209	—	—
Hamburg	4,111	896	209
Havre	292	5	—
Hiogo	1,343	24	—
Hull	10,034	586	815
Jamaica	129	—	—
Konigsberg	2,886	—	—
Leghorn	5,271	—	—
Leith	645	692	276
Lisbon	—	431	—
Liverpool	2,605	2,633	2,169
London	22,325	22,163	7,109
Marseilles	634	—	—
Naples	2,606	—	—
Newcastle	140	344	—
Nuevitas	7	—	—
Pillau	6,368	—	—
Rio Janeiro	262	—	51
Rotterdam	240	—	—
Singapore	2	—	—
Stettin	679	—	—
Swansea	—	—	184
West Hartlepool	780	—	—
Yokohama	2,257	—	—

EXPORTS of Paper, Books, &c., from the Port of New York to Foreign Ports for the Week Ended Dec. 7, 1881, with Aggregates and Values.

BOOKS, cases, to Dutch West Indies, 3; to Bremen, 3; to Hamburg, 4; to Liverpool, 15; to Australia, 6; to New Zealand, 1; to Barcelona, 1; to Porto Rico, 1; to Mexico, 2; to Venezuela, 2; to Brazil, 2; to China, 8; to London, 4; to British North American Colonies, 2; to United States of Colombia, 24; to Africa, 17.

PAPER, to Dutch West Indies, 1 cs.; to Liverpool, 6 cs.; to British Guiana, 300 rms.; to Australia, 11 cs.; to New Zealand, 1 cs.; to Porto Rico, 1,665 pkgs.; to Mexico, 102 pkgs.; to Venezuela, 60 rms.; to Brazil, 256 pkgs.; to London, 6 pkgs.; to British North American Colonies, 1 cs.; to British West Indies, 4,669 rms.; to Cuba, 21 pkgs.; to United States of Colombia, 133 pkgs.

STATIONERY, cases, to Dutch West Indies, 1; to Hamburg, 8; to Liverpool, 25; to Porto Rico, 2; to Mexico, 19; to Venezuela, 5; to Brazil, 10; to Japan, 1; to London, 3; to Hull, 13; to Glasgow, 13; to British West Indies, 4; to Cuba, 1; to United States of Colombia, 73; to Africa, 6.

AGGREGATES AND VALUES.

Paper, reams	5,049	$1,923
Paper, pkgs	2,183	9,252
Paper, cases	20	2,392
Books, cases	95	7,384
Rosin, bbls	3,125	13,197
Stationery, cases	183	9,090
Totals	10,655	$43,218

TOTAL EXPORTS.

General Merchandise for the week ended December 7, 1881	$7,668,184
Paper, &c., for the year ended May 27, 1873	2,889,482
Paper, &c., for the year ended May 26, 1874	1,783,877
Paper, &c., for the year ended May 25, 1875	2,327,682
Paper, &c., for the year ended May 23, 1875	1,654,384
Paper, &c., for the year ended May 29, 1877	1,790,659
Paper, &c., for the year ended May 28, 1878	1,576,562
Paper, &c., for the year ended May 27, 1879	1,889,783
Paper, &c., for the year ended May 26, 1880	2,016,545
Paper, &c., for the year ended May 25, 1881	1,920,058
Paper, &c., for quarter ended Aug. 24, 1881	573,198
Paper, &c., for quarter ended Nov. 23, 1881	604,757
Paper, &c., for the week ended Nov. 30, 1881	37,491

NEW YORK IMPORTS.

FROM DECEMBER 6 TO DECEMBER 13, 1881.

Paper Stock.

J. L. Taylor, State of Nebraska, Glasgow, 54 bs. rags, 43 bs. old papers.

Lee & Sturges, McDougall, London, 203 bs. rags, 98 bs. old papers.

W. H. Parsons & Co., by same, 215 bs. old papers.

J. W. Lyon & Co., by same, 100 bs. rags, 59 bs. old papers.

W. I. Clark, by same, 111 bs. rags.

Lee & Sturges, Holland, London, 213 bs. rags.

Cohn, Lazarus & Co., by same, 375 bs. rags.

Horwitz & Neustadt, by same, 41 bs. rags.

Horwitz & Neustadt, Parthia, Liverpool, 248 bs. rags.

Lewy Bros., Galatia, London, 253 bs. rags.

Horwitz & Neustadt, by same, 223 bs. rags.

Hagemeyer & Brunn, by same, 63 bs. rags.

Woolworth & Graham, De Ruyter, Antwerp, 238 bs. rags.

W. H. Parsons & Co., by same, 40 bs. rags.

Horwitz & Neustadt, by same, 125 bs. rags.

Train, Smith & Co., Paulina, Hamburg, 40 bs. rags.

Horwitz & Neustadt, Alpina, Hamburg, 84 bs. rags.

W. I. Clark, by same, 35 bs. rags.

J. W. Mason & Co., Wisconsin, Liverpool, 3 bs. old papers, 37 bs. manillas.

W. I. Clark, Persian Monarch, London, 201 bs. rags, 14 bs. manillas.

W. H. Parsons & Co., by same, 65 bs. rags, 153 bs. old papers.

J. W. Mason & Co., by same, 46 bs. manillas.

J. W. Lyon & Co., Olympia, Leghorn, 6 bs. rags.

H. M. Castle, by same, 50 bs. rags.

Horwitz & Neustadt, California, London, 14 bs. rags.

Hagemeyer & Brunn, by same, 95 bs. rags.

Horwitz & Neustadt, Assyrian Monarch, London, 84 bs. rags.

Horwitz & Neustadt, Othello, Hull, 122 bs. rags.

Paper.

Henry Bainbridge & Co., Neckar, Bremen, 6 cs.

Anton Knubel, by same, 1 cs. hangings.

Kaufmann & Strauss, by same, 3 cs. colored.

B. & P. Lawrence, Labrador, Havre, 1 cs.

L. Marcotte, by same, 1 cs. hangings.

Fischer & Kellar, City of New York, Liverpool, 2 cs.

F. A. Norman, Nederland, Antwerp, 7 cs.

L. De Jonge & Co., by same, 17 cs.

E. Hermann, Main, Bremen, 2 cs. colored.

Kaufmann & Strauss, by same, 9 cs. colored.

Geo. J. Kraft, Suevia, Hamburg, 4 cs. colored.

G. Gennert, by same, 2 cs. colored.

Robert Graves, Gellert, Hamburg, 2 cs. hangings.

B. Illfelder, by same, 2 cs.

P. Morganstein, by same, 4 cs.

Chas. Moller, by same, 1 cs.

Robert Graves, Britannic, Liverpool, 3 cs. hangings.

Geo. J. Kraft, by same, 3 cs.

B. & P. Lawrence by same, 18 cs.

Geo. H. Barbey, St. Laurent, Havre, 1 cs. hangings.

Kinney Bros., by same, 6 cs. cigarette.

BOSTON IMPORTS.

FROM DEC. 8 TO DEC. 14, 1881, INCLUSIVE.

[NOTE.—By order of the Treasury Department at Washington the names of importers of merchandise at this port are withheld from the press. Parties wishing their names to appear in the reports of imports will please communicate with J. Henry Blanchard, No. 103 Milk street.—ED.]

Books.

Bartlett & Co., Istrian, Liverpool, 9 cs.

J. Allyn, Marathon, Liverpool, 2 cs.

A. K. Loring, by same, 1 cs.

Little, Brown & Co., by same, 7 cs.

O. Ditson & Co., by same, 9 cs.

Estes & Lauriat, by same, 3 cs.

J. Hill, by same, 1 cs.

E. W. Hooper, by same, 1 cs.

Order, by same, 1 cs.

Paper, &c.

Gay & Wolf, Istrian, Liverpool, 14 cs. albums.

Frost & Adams, by same, 3 cs.

Stone & Downer, Marathon, Liverpool, 3 cs. manufactured.

A. P. Schmidt, by same, 2 cs. music.

C. Reid & Co., by same, 1 cs. card-board boxes.

Paper Stock.

Order, Istrian, Liverpool, 40 bs. paper stock.

Sugar River Paper Manufacturing Company, by same, 78 bs. paper stock.

Dutton & Schenck, by same, 169 bs. paper stock.

Train, Smith & Co., by same, 127 bs. paper stock.

M. A. Ring & Sons, by same, 15 bs. paper stock.

Morey & Co., by same, 5 bs. paper stock.

Order, Carroll, Halifax, 70 bs. paper stock.

S. A. Comey, by same, 68 bs. paper stock.

Haskins & Montague, by same, 74 paper stock.

J. E. Cutter, Carroll, Charlottetown, 5 bs. paper stock.

Order, Worcester, Charlottetown, 3 bs. paper stock.

Caustic Soda.

Warren & Co., Istrian, Liverpool, 36 drums.

J. L. & D. S. Riker, Marathon, Liverpool, 100 drums.

Soda Ash.

Wing & Evans, Istrian, Liverpool, 160 cks. alkali.

Linder & Meyer, Polynesian, Liverpool, 52 cks.

Boston & Sandwich Glass Company, by same, 10 cks. refined ash.

J. L. & D. S. Riker, Marathon, Liverpool, 51 cks.

Bleaching Powder.

Wing & Evans, Istrian, Liverpool, 193 cks.

Warren & Co., by same, 102 cks.

Linder & Meyer, by same, 252 cks.

Morey & Co., by same, 281 cks.

Warren & Co., Polynesian, Liverpool, 226 cks.

Linder & Meyer, Marathon, Liverpool, 92 cks.

China Clay.

J. Henry Blanchard, Santiago de Cuba, Savannah, 98 cks.

PHILADELPHIA IMPORTS.

Paper.

S. Semple & Sons, British Crown, Liverpool, 1 cs.

Paper Stock.

Order, British Crown, Liverpool, 6 bs. rags.

Soda Ash.

Brown Bros. & Co., British Crown, Liverpool, 229 cks.

W. Cunningham & Son, by same, 53 cks.

E. Yarnall, by same, 77 tcs.

Caustic Soda.

Order, British Crown, Liverpool, 237 drums.

Bleaching Powder.

Fergusson Bros., British Crown, Liverpool, 110 cks.

Order, by same, 90 tcs.

China Clay.

Order, Abel, Plymouth, 350 tons.

BALTIMORE IMPORTS.

Paper Stock.

Order, Zorida, Leghorn, 160 bs. rags.

DE WITT WIRE CLOTH CO.

No. 90 JOHN STREET, NEW YORK,

MANUFACTURERS OF

Brass, Copper and Iron Wire Cloth

—OF EVERY DESCRIPTION.—

FOURDRINIER WIRES and DANDY ROLLS.

Wire Rope and Cord, Brass and Copper Wire, Wire Window Screens and Guards.

VERNON BROTHERS & CO.,

PAPER WAREHOUSE,

65 and 67 Duane St., New York,

Manufacturers of the following Brands of Writing: Alleghany, St. Lawrence, National, Bay View, Congress, Windsor, Neptune, Castle, Durand & Co., and Palisade Note, Letter, Foolscap, Legal and Bill Cap Papers.

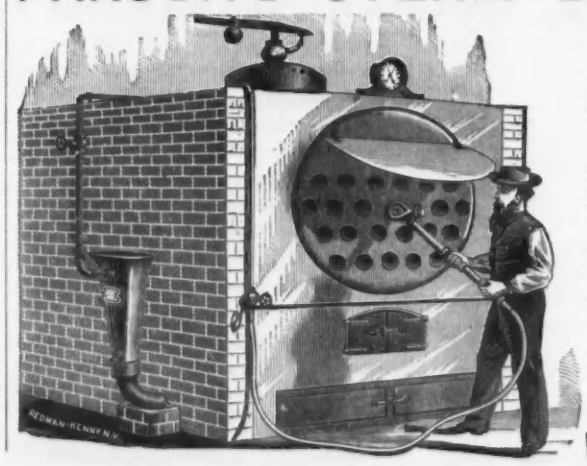
Manufacturers of the Vernon Paper Company's Ledger Paper, United States and Washington Flats, Superfine and Fine Flat of all sizes, White and Colored French Folios, Colored Flat Caps and Folios, Buff and Gold Envelope Papers, Engine Sized Flat Papers of first, second and third qualities, for Blank Book Manufacturers.

Manufacturers of Colored and White Tissue Papers and Tissue and Manilla Copying Papers.

Dealers in Rope and Jute Manillas of all sizes, Tissue Manillas, 16, 20 and 24 sheet count; Seidlitz Paper, Hardware, Machine, and Super Calendered Book and News, Colored Poster, Glazed Cover; Diamond, all Rag, White and Colored Blotting—equal to any manufactured.

Importers of English White and Silver Ware Tissue.

PARSON'S STEAM-BLOWER



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It requires no gearing, belting, or machinery. It is a power within itself, capable of accomplishing a wonderful range of work.

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NEW YORK: SATURDAY, DEC. 17, 1881.

Advertisements cannot be received for insertion in the current week later than 9 A. M. on Friday. The charge for advertising is 25 cents a line, each insertion. Special terms for standing and displayed advertisements to be had on application. Card in Directory Column and one copy of paper, $15 a year.

THE PAPER TRADE JOURNAL is the recognized organ of the various Paper Makers' Associations of the United States.

THE JOURNAL contains the latest and fullest information relative to the paper trade in all parts of the world, including descriptions of new appliances and processes for making paper, experiments with new fibres and other materials, a record of the water supply, with the latest manufacturing news in all parts of the country. It gives the cream of all the foreign technical journals which relate to the paper interest, besides communications from competent persons in the trade, both at home and abroad. The market review and quotations show the state of trade in all the principal cities, and no pains have been spared to make these accurate and complete.

Subscription and postage for Great Britain, per annum..... £1

Subscription and postage for France, per annum..... 25 francs

Subscription and postage for Germany, per annum..... 24 reichsmark

Foreign subscribers may address our New York office.

Communications on matters of interest to the trade are earnestly solicited from all quarters, and if used will be liberally paid for. Items of news and facts of all kinds in relation to the state of the mills, &c., will be gladly received.

All communications must be addressed to

HOWARD LOCKWOOD,

Publisher and Proprietor,

No. 74 Duane Street, N. Y.

BRANCH OFFICES.

Philadelphia Office: J. VIENNOT, General Manager, 407 WALNUT STREET.

Western Office: P. G. MONROE, General Manager, 8 LAKESIDE BUILDING, CHICAGO, ILL.

FOREIGN GENERAL AGENTS.

W. F. Catcheside	5 Ludgate Circus Building, London.
Elfwing & Co	Stockholm, Sweden.
John L. Sprague	Gibraltar, Spain.
Leonardo Pardo	Vigo, Spain.
S. H. Haine	Antwerp, Belgium.
G. Galvagno	Turin, Italy.
S. Bernard	Venice and Florence, Italy.
G. Gade	Christiana, Norway.
J. H. de Bussy	Amsterdam, Holland, and the Dutch East Indies.
John Hogan	Melbourne, Sydney, and Adelaide, Australia.
W. Bartleet Langdridge	Auckland, New Zealand.
R. T. Wheeler	Dunedin, New Zealand.
W. Snelling	Brisbane, Queensland.
A. G. Webster	Hobart Town, Tasmania
Knight & Co	Newchwang, China.
I. D. Clark	Shanghai, China.
Sargent, Farsari & Co	Yokohama, Japan.
A Illustraçao Brasileira	Rio de Janeiro, Brazil.
Camilo Garcia	Puntarenas, Costa Rica.
Federico Caine	Havana, Cuba.
Seymour Keeler	Valdivia, Chili.
José A. Barros	Barranquilla, Colombia
Pedro Obregon	La Guaira, Venezuela.
Imp. de "El Ferrocarril"	Montevideo, Uruguay.
Bethencourt e hijos	Curaçoa, W. I.
Da Costa & Co	Barbadoes, W. I.
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Alex. D. Campbell	New Westminster, British Columbia.

TO CORRESPONDENTS.

As THE PAPER TRADE JOURNAL *is the recognized vehicle of communication in matters of trade interest, we will be glad to receive correspondence from all parts of the country. Information and suggestion upon paper-making topics are especially valuable, and manufacturing news and personal items are equally acceptable.*

Subscribers to THE JOURNAL can be supplied with the best cloth binder in the market. Deliverable at the publication office Price, $1.25.

Readers of this paper who avail themselves of the information obtained from its columns, by advertisement or otherwise, are requested to notify their correspondents of the source of their information.

ONE of the New York daily papers is calling for proposals for supplying it with paper—"cash on delivery." Does it expect to break the market?

WE have received a copy of the Paper Trade Directory or "Adress-Buch" of the paper and pulp mills of Austria, Germany, Denmark, Russia, Switzerland and Sweden, for 1881-82. This directory is published by *Oesterreichisch-ungarischen Papier Zeitung* at Vienna, and, in addition to the list of mills, contains the addresses of paper dealers, publishers, &c., in the Austrian Empire.

MEXICO has been imposing additional duties on imports, and these are alleged to discriminate against the United States and in favor of Europe. If this is true, there are some influences at work which it is the duty of the Department of State to counteract. The subject calls for immediate explanation, and it is to be hoped that the administration will attend to it at once.

AUSTRIA wants higher import duties, and her twin-sister Hungary opposes their imposition. The dual form of government which unites the two countries in one empire makes any change of policy difficult. Yet Austria shows substantial grounds for her demand. Certain of her industries have fallen away, and her imports and exports in some lines show great discrepancies in favor of the former. The effort has been made to reconcile the opposing interests, but the disposition of either to make concessions is not so broad as to promise harmony.

ATTENTION has before this been directed to the fact that an Exposition is to be opened at Buenos Ayres on February 15, 1882. This will continue open for three months. The manufacturers of this country will be permitted representation in the second or machinery section of the exhibition. Among the subdivisions of this section we find that Class 1 in Group 4 includes machinery and tools for the manufacture of paper. We fear that very little may be expected from this country at the exhibition, but shall be surprised if some of our eager rivals do not take the benefit of it.

BY one of those comical yet annoying accidents which will happen in even the best regulated newspaper offices, an announcement of the establishment of a branch house in this city was put under the head of "Failures" instead of "Changes," in "making up" last week. We discovered the error too late to rectify it. It has, however, called forth a letter from the parties interested, who say: "It is rather hard to make an announcement of our intention to open an office in New York and to place the same under the heading of failures. We prefer not to have the event anticipated, and don't want to borrow trouble." We sympathize with our friends, and hope that they will be living examples of the futility of omens.

THE enlargement of our foreign trade has been considered by our Consul at Sonneberg, Germany, and as that official offers advice of a practical nature we will briefly call attention to it. He says that there is no denying the fact that trade is to be introduced into foreign countries on the same principles which govern its introduction among the people of the United States. In the United States our merchants do two most effective things: 1. They advertise; 2, they send out agents or drummers, who throng railroads and steamboat lines, and go into remote interior and rural places to make their wares known, and the result is the establishment and success of their houses. The same course should be pursued across the seas, especially in Europe. The fact that different languages are spoken in different countries makes little difference. Competent agents can be easily secured who speak the languages of the Continent; but an intelligent man who speaks only English can get along well enough in all of the principal cities, towns and districts, for English is spoken to some extent by nearly all business communities. But if the employment of an agent by each manufacturer is too expensive, our manufacturers can unite in a sort of "International Exposition Union," the object being the display of their wares in those countries where they would be likely to meet with a demand. One agent might be employed for each consular district, and he might establish his sample room at the town where the consulate is located, and this might be, to a certain extent, under the protection of that officer. He could then advertise in the newspapers of the district, and invite buyers to come and examine the goods of the manufacturers who had thus associated themselves together. One of these rooms should be located especially at every centre of trade. In regard to perishable articles special instructions could be given the agent in each case. The only objection to this plan is the expense of renting the room and employing the agent; but this could easily be borne by the "Union." Besides, the adage is true in this case as well as in all others that "risks make merchants." Consul Wharton concludes by saying: "I am encouraged to believe that American importations to this country would largely increase if some such vigorous measures were adopted as those suggested. The sample room in Coburg is an earnest of what might be done. To bring toys and fancy goods to this district (Sonneberg) is like "bringing coals to Newcastle," but still they are here. If *they* can be successfully brought here, how much more into the non-producing districts?" It will therefore be seen that the Consul makes it simply a matter of knowing how to create a trade. Manufacturers and buyers have to be brought properly in contact. The market is ready and the goods are also available.

Communications.

[Communications are solicited from everyone who has anything of value or interest to impart. Items of news, trade gossip, and personal information, will be gladly received. Correspondents are requested to write only on one side of the paper. No responsibility for the opinions of correspondents attaches to this paper. Communications must be sent to reach this office by Wednesday night or Thursday morning of each week, to insure insertion.]

Wear of Felt.

LACHUTE, December 10, 1881.

To the Editor of The Journal:

I would like to know from some of your many correspondents who are posted in these matters how long a wet felt on a cylinder machine should last; in other words, how many tons of paper—say manilla—it should make.

Will some one please give me his experience, and, if he is not selfish, say how the machine may be run to make the felt last the longest.

NEW HAND.

From Stuff-Chest to Reel.

HOLYOKE, MASS., December 13, 1881.

To the Editor of The Journal:

There has been considerable in THE JOURNAL and in the Holyoke papers about the machine that has just started in the Syms & Dudley paper mill, and it does not do justice to the machine tenders nor to the company. I will give you the facts.

I am a disinterested party, and like to see honor given to whom it is due. The facts are these: George E. Dudley, the treasurer of the company, told the machine tenders that he would give each one of them a suit of clothes if they got paper on the reel in ten minutes from the time the stuff was turned on the machine. The machine tenders worked for it, or they would not have accomplished it. In seven minutes and thirty-five seconds from the time the stuff was turned on the paper was on the reel. They ran from that time until ten o'clock on Saturday night—forty-eight hours—without a break in the paper or a shut down, and could have run longer but for shutting down for Sunday. In that time they made 19,116 pounds of paper.

The machine is an 80-inch Fourdrinier, built by Rice, Barton & Fales. It was started by John Keough and Ed. McDonnell, the latter lately from the Albion Paper Company, and the first from the Crocker Paper Company, of which Mr. Syms was superintendent. I had the pleasure of seeing the book with the record written in it by Mr. Dudley, who held the watch at the time the start was made. I have also been told that Mr. Dudley also gave each of the engineers a suit of clothes the same as the machine tenders, he was so well pleased.

PAPER MILL HAND.

Changes, Removals and New Firms.

F. M. Pickering, Cincinnati, has sold out his stationery store.

T. J. Shelton, publisher of the *Times*, Wichita, Kan., has sold out.

R. R. Marsh, publisher, Austin, Minn., has sold out to B. F. Langworthy & Son.

William H. Smith, publisher of the *Argus*, Milton, Pa., has sold out to Charles Hottenstein.

Ellis, Robinson & Co., printers, 129 State street, Boston, have succeeded Chas. E. Ellis & Co.

Samuel Bard, paper manufacturer, Logansport, Ind., has sold out to the Logansport Paper Company.

The firm of Rose & Hodge, dealers in printers' supplies, Chicago, Ill., has been succeeded by Rose, Hodge & Co.

J. W. Pike & Co., publishers of the *Commercial Bulletin*, Philadelphia, Pa., have dissolved partnership. James W. Pike continues.

Bingham & Lee, designers, engravers and printers, 32 Thorpe Block, Indianapolis, Ind., will begin active operations about January 1, 1882.

The firm of James S. Mahaffy & Co., publishers, &c., Memphis, Tenn., has been succeeded by Graves & Mahaffy, G. W. Granbery withdrawing.

A. P. & A. F. Holbrook, printers, 11 Mechanic street, Newark, N. J., continue the business carried on by their father, A. Stephen Holbrook, who died last year.

William Bruns, publisher, &c., New York, has bought out the business of Wm. M. Donaldson & Co., 298 Broadway, and is offering to close out the stock by January 1.

A new firm, styled the Sentinel Publishing Company, has been organized at Cape Elizabeth, Me. (P. O., Ferry Village), for the publication of a weekly paper called the Cape Elizabeth *Sentinel*. It is not an amateur sheet.

The firm of Hinkley & Southland, printers, Indianapolis, Ind., has been dissolved. Mr. Southland retiring and Otis Hinkley and George H. Elder, combining two offices, will now conduct the business under the firm name of Hinkley & Elder, at 51 W. Washington street.

Dodd & Hemingway, printers, Pittsburg, Pa., have sold out to Genge & Thompson.

The Excelsior Printing Company has succeeded the Globe Printing Company, Baltimore, Md.

Stoutmeyer & Co., publishers of the *Times*, New Orleans, La., have dissolved partnership.

The Loring Paper & Twine Company, Boston, Mass., will remove from 289 to 278 Devonshire street.

Roberts & Co., paper makers, North Amherst, N. H., have dissolved partnership. W. L. Roberts continues.

Lloyd & Clemens, publishers of the *Advance*, Akron, O., have dissolved partnership. William Clemens succeeds.

Charles Rockwell has started a chemical fibre mill at Hadley, N. Y., under the style of the Rockwell Falls Pulp Company.

Alexander Robertson has retired from the firm of Billings, Harbourne & Co., booksellers and stationers, San Francisco, Cal.

J. W. Downs, publisher of the *Examiner*, Waco, Texas, has admitted L. T. Ross to partnership, under style of Downs & Ross.

A. Moog & Brothers, printers, Baltimore, Md., have taken the old stand formerly occupied by the Atlas Printing Company, at 446 West Baltimore street.

The Compton Lithograph Company, St. Louis, has removed to the northeast corner of Third and Vine streets. It has largely extended its facilities for work.

The Utica Paper Company, Utica, N. Y., has been reorganized as the Pittstown Paper Company. P. Harter is president and Charles White treasurer and secretary.

The Ripley Manufacturing Company, E. B. Ripley, president and treasurer, John Scantlin, secretary, has been organized, and has built a paper mill at Unionville, Conn.

The Mercantile Printing House, Hartford, Conn., has been consolidated with the Fowler & Miller Company, and the business will be conducted under the style of the latter concern.

The Westport Pulp Company, Limited, has been organized at Westport, N. Y. A. Clark is president, A. A. Prescott, vice-president; A. E. Williams, treasurer; M. A. Clark, secretary.

The Morrison Manufacturing Company has been organized at St. Joseph, Mich., to manufacture paper. A. H. Morrison is president and treasurer and Don Morrison is secretary and superintendent.

The book and job printing office of John C. Eckel, Eighteenth and Market streets, Philadelphia, has changed hands from father to son. Earl W. Eckel has had entire control and management since May last.

Failures.

The *Globe*, Lincoln, Neb., has made an assignment.

L. Barnes & Co., dealers in paper hangings, Lowell, Mass., have failed.

J. F. Oltrogge & Co., printers, New York city, are asking for an extension of six, nine and twelve months.

Payette & Bourgeault, booksellers, &c., Montreal, P. Q., are advertised to be sold out by the sheriff on the 15th inst.

It is reported that John P. Wood, of Indianapolis, Ind., wholesale paper dealer, has failed, with liabilities amounting to $25,000. He gave the Central Bank, one of his heaviest creditors, a bill of sale amounting to $8,445. Other heavy creditors who are unsecured have placed an attachment on the stock.

Some of the creditors of the J. J. Parsons Bookbinding Company, of this city, are growing impatient at the delay of the assignee in presenting a statement of its affairs, as several months have elapsed since the assignment was made. If they are not to receive more than 10 per cent. they would like to know it.

A meeting of the committee of creditors of the American Book Exchange was held yesterday afternoon to receive the statement of the manager, Mr. Alden. A meeting of the stockholders is appointed to take place at the office of the company on Monday next, December 19, to consider the condition of the company's affairs.

Very little interest seems to be taken by the creditors in the affairs of the Pequonnock Paper Company since it has been learned that its assets have dwindled to so insignificant a sum. Some of the creditors think that there is a chance for something to be realized from a claim the company has against the corporation of Bridgeport for damages in cutting off its water supply several months ago.

A meeting of the creditors of Miller, Ussing & Co. was held on Thursday at the office of Samuel G. Adams, counsel for assignee, 318 Broadway, this city. Mr. Adams offered, on behalf of the firm, 15 cents on the dollar, but the creditors refused to accept it without first investigating the firm's books. A committee was appointed for that purpose, and another meeting will be called. The liabilities are between $17,000 and $18,000; the nominal assets are $9,000 and the actual assets $4,000. The judgment granted to Dickinson & Clark for $485, for which they attached the firm's goods has been settled, the money being paid.

A meeting of the creditors of W. J. Anderson took place on Wednesday at the Stationers' Board of Trade. The committee of creditors appointed to investigate his affairs reported, recommending to the creditors to accept 25 per cent. in cash. After some discussion, this was agreed to, with the provision that it should be paid up by February 15 next, and not to be binding unless accepted by creditors representing two-thirds of the total liabilities, and the assignee to remain in charge of the estate until the settlement is completed. A resolution was adopted, recommending all of the creditors to accept this compromise at once, so that in the event of the consent of the required number being obtained a speedy settlement can be made. The meeting was attended by about thirty creditors, representing nearly $30,000 of claims.

A meeting of the creditors of J. H. Van Kirk & Co. has been called by the assignee, to take place on Tuesday next, December 20, at the Stationers' Board of Trade, to receive the report of the committee appointed at the last meeting. The amount of the contingent liabilities not stated at the previous meeting and not at that time included in the aggregate of liabilities, is found to be $34,000; and the assignee states, that in his opinion, the estate will not be able to pay the creditors a larger dividend than 25 or 30 per cent., while some of the creditors believe that by good management 40 per cent. can be realized.

The creditors of the Massachusetts Paper Company met at Springfield on Thursday and voted to instruct Philo Cline to file an insolvency petition as soon as possible. John Olmstead presided, and Mr. Cline was asked what he had made up his mind he could do. He said that any thought of his paying 20 cents, or 15, must be put aside in a few words. He had held on to a faint hope that $50,000 or $60,000 had been in some way overlooked in the accounts, and might yet be recovered, but that delusion had vanished in smoke. A re-inventory of the stock of paper, rated at $17,000, had shown a shrinkage in value of several thousand dollars, and a similar review of the rags on hand would probably depreciate them some $5,000. Should he attempt a settlement in his own name he would have reason to apprehend three separate fights, and "God knows," said he, "that I don't wish a repetition of this experience." If he were to undertake the payment of 10 cents he should want a unanimous guaranty of a full and prompt settlement by the creditors and of no subsequent bringing up of additional liabilities. And then he remarked: "That is all, gentlemen; and now if I deserve hanging, hang me!" Immediately after he said that if the creditors would unanimously consent he would assign whatever property there is left to some proper person to be chosen by them, so that a pro rata division may be secured without the expense of the insolvency court. A motion was made that he should go into insolvency at once, and that the creditors should do all in their power to help him expedite matters. Mr. Cline said that he was ready to take the step indicated, and Mr. Olmsted asked if Mr. Hunter, the secretary of the Stationers' Board of Trade, had anything further to report. The latter then said that investigations of the books since the last meeting showed that some $52,000 stand on the debit accounts of certain parties, which, if the books were properly balanced, would have to be charged off to the profit and loss, or the rag, or some other account. In other words, it is easy to see that these losses have been incurred, but impossible to tell how or why. An examination of the merchandise account from July 1 to the suspension shows that the rags bought amounted to $256,024, the sales of rags footing up $245,153. Had these rags been sold at merely the invoice price the account should show the worth of $10,870 now on hand. It is understood that the $6,000 in rags of that lot which have been replevined came from the stock included in the above estimate. This would leave $5,000 in rags now on hand, and about that amount is found in stock, but whether they have been bought within the last six months no one can say. During this same period there is charge on the expense account of $27,000, divided in this way: Interest, $1,673; rent, $1,855; cartage, $2,078; back charges, $8,117; freight, $8,431; wages, $4,369. Adding to these figures the paper bought since July, an old account of $6,000, and about $3,600 as Mr. Hunt's salary for the year, a total of $293,000 is reached. Mr. Hunter explained further that an examination into the number of pounds of rags bought since July 1 has been begun. He thought that the only inference to be drawn is that the concern bought rags on whatever credit it could get and sold for cash for any price offered, without regard to cost, an entirely reckless way of doing business. A creditor then called for the passage of the insolvency motion on the ground that all opposing talk is useless, as it is well known that some of the creditors refuse to waive a single cent of their full claims. The chairman said he felt that, if the creditors forced the concern into insolvency, they would fail to realize anything, and that if the obstacles to an outside settlement could be removed he should favor it. The motion was then carried. Mr. Cline said he was willing to take the step voluntarily, and he wanted the meeting to understand that he left Springfield twenty months ago, supposing the business was being carried on all right, and had entertained the same idea during his absence. He was asked how long since he had changed his opinion, and he answered, "About three weeks." Mr. Long asked him if his agent didn't know the true state of affairs when the city bank's mortgage was negotiated, and he replied: "He knew that he was in need of money, and that the mortgage promised him $15,000; but it didn't net him fifteen cents." At this point Mr. Parker said that the creditors' committee thought they ought to put out a circular, asking a full representation of creditors at the first insolvency meeting, so that a suitable assignee can be selected. J. H. Newton resigned from the committee and E. C. Rogers was substituted. After some debate, it was voted that the committee should be instructed to collect proxies from the other creditors for such an assignee as they may select. After some discussion about the pay of the committee, resulting in a vote instructing Mr. Cline to provide for it from funds in his hands, the latter took two $1 bills from his pocket and tendered them to the committee, and the meeting adjourned.

Chattel Mortgages.

[In the appended list R. signifies a renewal of a pre-existing mortgage; B. S., bill of sale; and Real, a mortgage on real estate.]

Mortgagor.	NEW YORK CITY.	*Amount.*
H. N. W. Magill		$356
Chas. Suydam (R.)		280
Union Paper Box Company		15,000
D. F. Leavitt		500
W. V. Weber (R.)		600
	MIDDLE STATES.	
John Murphy, Jersey City, N. J. (B. S.)		300
	EASTERN STATES.	
William S. Clark, Boston, Mass		60
John O. Shaw, Bath, Me. (Real)		800
	WESTERN STATES.	
J. M. Scanland, Denver, Col		$101
W. O. Kelsey, Casey, Iowa (Real)		200
C. S. Eastwood, Spirit Lake, Iowa (Real)		740
William M. Lomasney, Detroit, Mich		40)
William Clemens, Akron, O		400
J. Rockwell & Co., Columbus, O. (R.)		212
A. D. Fleming, Appleton, Wis		6,044
Hodges & Cates, Appleton, Wis. (B. S.)		1,000
Isaac Robinson, San Francisco, Cal. (B. S.)		2,090
William M. Kennedy, Dixon, Ill		1,000
John P. Wood, Indianapolis, Ind		3,341
Anthony Barrett, South Bend, Ind. (B. S.)		1,478
Ferris W. Dyer, Ann Arbor, Mich		700
J. B. Battelle & Co., Toledo, O		550
French Brothers, Toledo, O		190
	BRITISH PROVINCES.	
William Templeman, Almonte, Ont., Can		$3,000

Fires.

The Dominion Leather Board Company, Chambly, Ont., was burned out on December 13.

The *Post* Printing and Publishing Company, Montreal, Canada, has been burned out. Partly insured.

The stock of J. L. Pool, dealer in paper hangings, Oswego, N. Y., was damaged by fire on the morning of the 11th inst. Estimated loss, $1,000; insured for $4,500.

In Town.

R. M. Fairfield, H. Dickinson, Mr. Clarke and Mr. Greenleaf, Holyoke, Mass.; L. Brainerd, Hartford, Conn.; H. H. White, North Manchester, Conn.; C. A. Delaney and E. B. Ripley, Unionville, Conn.; C. M. Robertson, Montville, Con.; E. S. Ely, Norwich, Con.; L. C. Woodruff, Buffalo, N. Y.; S. Kirby, Waverly, N. Y.; Frank Gilbert, Waterford, N. Y.; Charles S. Wheelwright, Providence, R. I.; Charles Benton and P. C. Baird, Lee, Mass.; C. F. Plunkett, Adams, Mass.; J. A. Crane and R. B. Crane, Westfield, Mass.; W. M. Crane, Dalton, Mass.; E. P. Chapin, Springfield, Mass.; George Marshall, Turners Falls, Mass.; John Watson, East Hampton, Mass.; Owen Harrington and Mr. W. F. Paul, Boston, Mass.; Wm. Megargee, Philadelphia, Pa.; C. L. Hawes, Dayton, Ohio; E. R. Solliday, Lambertville, N. J.

Straw Board Dealers Association.

The annual meeting of the Straw Board Dealers' Association was held on Wednesday at the Grand Central Hotel in this city. At an adjourned meeting on Thursday it was unanimously agreed that an advance of $5 per ton should be made on all three grades from that date. The Lining Association made no change in the rates adopted at the September meeting. The advance in the price of straw at the West, and the high cost of raw materials in the East, induce the trade to take this action.

The association unanimously adopted the following resolution:

WHEREAS, It has pleased God, in His infinite wisdom, to remove from our midst our late associate, Joseph R. Gresimer, of the firm of Gaskill & Gresimer, of Philadelphia; therefore,

Resolved, That we take this method of expressing our high appreciation of the character of our late associate and bear testimony to his many manly and genial qualities. We cherish his memory as a genial associate and an upright and capable business man, and we hereby authorize the secretary of this association to enter this resolution upon its minutes, and to transmit a copy to the family of the deceased.

THEODORE PINKHAM, ALFRED WELTZ, J. F. SPAULDING, } Committee.

J. F. SPAULDING, Secretary of Straw Board Dealers Association.

Manufacturing News.

EASTERN STATES.

J. A. Bacon, Lawrence, Mass., has increased the daily capacity of his mill to twelve tons. He has put in four 1,000-pound engines.

A Jordan engine and two 1,000-pound engines have been put into Ward Brothers' mill at Riverton, Conn.

The Montague Paper Company, Turner's Falls, Mass., has added two 400-pound and one Jordan engine, seven 62-inch wet machines and thirty-two pulp grinders.

MIDDLE STATES.

The mill of the Fort Orange Paper Company, Castleton, N. Y., is run on postal card and book papers. One Jordan engine, three 1,200-pound and two 500-pound engines have been added to this mill, and the capacity is now nine tons every twenty-four hours.

The Pittstown Paper Company is building a new mill at Utica, N. Y. P. Harter is president of the company, and Charles White treasurer and secretary. The mill will contain four 500-pound engines, and one 62-inch Fourdrinier. It will be run by steam on manillas and wrapping, with a capacity of three tons in twenty-four hours.

WESTERN STATES.

Newberry Brothers, Vernon, Mich., have put in steam power at their mill.

The Republic Paper Mills, Springfield, Ohio, made, during the month of November, of heavy straw paper, 171,850 pounds; light straw paper, 147,150 pounds; total, 319,000 pounds; and it was not a very good month for making paper either. The mill has five 550-pound engines and two 62-inch machines, and was shut down one and a half days from breakages.

SPECIAL NOTICES.

[Insertions under this heading will be charged 50 cents a line. Payment invariably in advance.]

EUGENE SULLIVAN,
Packer of Rags and Paper Stock,
356 & 358, WATER STREET, NEW YORK.

New Zealand Exhibition, 1882.

American Manufacturers are informed that John Hogan will take charge of Exhibits in the United States Court and guard the interests of his principals. Particulars may be obtained at the office of this paper.

Samples and show-cases may be sent by sailing vessel to Sydney, if none laid on for Lyttelton, the port at Christchurch. Small parcels by Contanseau's Rapid Foreign Express, 128 Broadway, New York.

Reference: Fred. A. A. Wilson, manager Mercantile Bank, Sydney, or Howard Lockwood, proprietor "Lockwood Press,"

Cable address: Hogan, Sydney. Postal address: John Hogan, Box 337, G. P. O., Sydney, New South Wales.

Market Review.

OFFICE OF THE PAPER TRADE JOURNAL, FRIDAY, December 16, 1881.

THE MONEY MARKET.—The money market remains in about the same stringent condition of a week ago. The rates to call borrowers ranged at the close at 4 to 6 per cent. on pledge of stock collaterals, and on government bonds at 4@4½ per cent.

The stock market has been firm most of the week, although, as usual of late, very sensitive to reports and rumors circulated in the interest of both sides. The dealings have been comparatively small and confined mainly to the regular brokers, the stringeecy of the money market being against heavy transactions.

Government bonds have been in active demand and prices firm. Railway bonds of the better class also have a firm support, with a fair business.

Sterling exchange is steady. French a trifle easier, and other kinds steady.

The posted rates at the close were:

Bankers' sterling, 60 days, actual	$4.80	@4.80¼
Bankers' sterling, sight, actual	$4.84	@4.84½
Cable transfers, nominal	$4.84½	@4.85½
Prime commercial sterling, 60 days	$4.79¼	@4.79½
Documentary sterling, 60 days	$4 78¾	@4.79
Paris, bankers', 60 days	5.25⅝	@5.26¼
Paris, bankers', sight	5.20⅝	@5.21¼
Antwerp, commercial, 60 days	5.29⅝	@5.30
Swiss, bankers', 60 days	5.25	@5.25⅝
Swiss, bankers', sight	5.20	@5.20⅝
Reichsmarks (4), bankers', 60 days	94	@94⅛
Reichsmarks (4), sight	95	@95⅛
Guilders, bankers', 60 days	39¾	@39⅞
Guilders, bankers', sight	40⅛	@40¼

THE PAPER TRADE.—There is no new feature in trade this week. Business is about the same as it has been since the month opened. Although, as a general thing, there is an indisposition for new transactions so close to the end of the year, we hear of considerable doing in the renewal of contracts for the coming year, and in most instances on terms quite satisfactory to the manufacturer. Values continue in a very firm line. We hear of some manufacturers of low grade manillas asking an advance of ¼@½c. The dealers and manufacturers of Straw Boards this week adopted a new scale of prices, making an advance of $5 per ton on the three grades, which are $60, $55 and $50 per ton for Nos. 1, 2 and 3 respectively.

JUTE BUTTS.—The market this week has been quiet, the sales aggregating about 1,000 bales Paper and Bagging quality on spot at 2 11-16c. for Paper and 2⅞c. for Bagging. The market closes firm at 2 11-16c. to 2¾c. cash and time for Paper Butts on spot, 2 9-16@2⅝c. to arrive, and 2⅝c. to 2 15-16c. for spring quality.

WOOD PULP.—The demand continues very full and prices are quoted firm at 2½@3c. for Spruce, and 2¼@2⅜c. for Poplar Ground Wood Pulp as to quality and distance of shipment. The consumption of Chemical Fibre still absorbs the production very readily, and 5¼@5½c. is asked for the best makes of Bleached, and 4¼@4¾c. for Unbleached.

FOREIGN RAGS AND PAPER STOCK.—The general character of the market remains substantially as noted last week. The few transactions reported are to meet the immediate requirements of manufacturers, not many showing any desire to anticipate their wants, but buying as little as they can do with until after the beginning of the next year. Importers and dealers are not pressing their stock, and for such goods as are wanted ask full prices. Among the reported transactions were 50 tons extra fine Blue Cottons at 3⅝c.; 200 bales Calcutta Gunny Rags at 2 1-16c. cash; 15 tons Scotch Blues at 2⅝c.; 25 tons do., Seconds, at 2⅞c.; 25 tons of good London Seconds at 2⅝c.; 100 tons extra do. at 3c.; 50 tons extra English Seconds at 3⅛c.; 50 tons good London Outshots at 4⅛c., and 50 tons extra S. P. F. Linens at 4⅝c. The arrivals during the past week aggregate 3,501 bales and bags, embracing 3,033 bales Rags, 571 bales Old Paper, and 97 bales Manillas.

DOMESTIC RAGS.—In the present dull condition of the market, packers and dealers show no disposition to urge stocks, and prices are nominally steady. Western Whites are rather scarce and prices are firmly held. On mill selected No. 1 Whites, delivered East, 5¼c. is quoted; on No. 2 do., do., 4½c., and Thirds and Blues, 3⅝c., all on four months. New York City Whites are unchanged, 4⅝@5c. covering the range for No. 1 ordinary to prime selected stock, and 2¾@3c. for ordinary to extra No. 2 do. Seconds are also unchanged, the range being from 1⅝@1¾c., with nothing but strictly prime at the outside price. Among other sales were 40 bales No. 1 City Whites at 4½c., 50 bales No. 2 do. at 2¾c., 90 bales Seconds at 1¾c., 225 bales Western Thirds and Blues at 3⅜c. on four months, and 10 tons prime Western Cotton Canvas at 4½c.

BAGGING, &c.—Gunny Bagging remains firm on a quiet market. There are some offers, but importers are not disposed to entertain them, and consequently very little business is done. The range of quotations for good No. 1 Manchester Bagging, according to quality, is 2⅝@2¾c. There is some demand for No. 2 Bagging, but there is very little here; 2@2⅛c. is quoted. Manilla Rope is steady and in moderate request, at 3⅝@3½c. for Domestic and 3¼c. for English. We note sales of 70 tons No. 1 Manchester Bagging at 2.65c., 12 tons Domestic Rope at 3⅛c., and 25 tons extra English do. at 3⅝c.

OLD PAPERS.—Trade continues slow, and the general movement remains about the same as reported last week. Moderate sales are reported within our range of quotations: We quote: No. 1 Hard White Shavings, 4@4¼c.; No. 1 Soft White do., 3½@4c.; White and Colored Mixed do., 2¾c.; Solid Blank and Printed Books, 3@3½c.; Mixed Book Stock, 2¼@2⅝c.; Light Book Stock, 1¼@1¾c.; Pure Manillas, 2⅝@2⅝c.; Folded News, 1¾@2c.; Bogus Manillas and Hardwares, ⅞@1c.; Commons, ⅝@⅞c.; Binders' Boards Clippings, 1 3-16@1¼c.; Straw do., 1⅛@1 3-16c.

STRAW—Is steady and meeting with fair attention, and former prices are sustained We quote, in New York, 70@80c. for Long Rye, 55@60c. for Short do., and Oat 40@50c.

ROSINS.—The market continues firm for the lower grades, and quiet but steady for the higher qualities. We quote f. o. b., cartage included, viz.: C Strained, $2.70; D Good Strained at $2.85; E at $3; F Good No. 2 at $3.10; G Low No. 1 at $3.25; H No. 1 at $3.35; I Good No. 1 at $3.45; K Low Pale at $3.50; M Pale at $3.80; N Extra Pale at $4.25 and W G at $5.25.

CHEMICALS.—The market remains quiet for most articles, and very few changes have occurred in prices, sellers generally being steady in their views. The foreign markets are reported quiet, and we learn that at a recent meeting about 85 per cent. of the alkali manufacturers resolved to reduce their output about 20 per cent. Considerable of the recent arrivals of Bleach is in a damaged condition owing to the stormy weather at sea. Sal Soda continues scarce on spot and is firmly held. Caustic Soda and Ash are in fair supply and light request with values steady. Sales are said to have been made here as follows: 165 cks. Bleaching Powder at $1.40@1.50, as to brand and quantity; 300 tons Soda Ash at $1.62½; 175 drums Caustic Soda, 70 per cent., at $3.42½; 50 tons Sal Soda at $1.30; 200 barrels Lump Alum at 2¼c.; 150 barrels Ground Alum at 2⅝c.; 400 barrels Pearl do. at 2⅝c.; 500 barrels Natrona Porous Alum at 2⅝c.; 50 tons Aluminous Cake at $1.50; 10 casks German Ultramarine at 25c.; 10 cks. yellow Prussiate Potash at 25½c.; 25 cks. Antichlorine at 3c.; 50 barrels Venetian Red at 1¾c.; 10 cks. Orange Mineral at 8½c.; 50 bxs. Extract Logwood at 8½c.; and 5 cks. Brown Sugar of Lead at 9¼c.

CHINA CLAY, &c.—There is still a lack of any important business in English Clay, but prices are nominally steady. The quotations are $14@15 for the low grades, $16@18 for the medium to good, and $20@21 for superfine. Southern is offering very sparingly at $10.50@11.

COAL.—Owing to the recent freer deliveries on contract, the demand for Anthracite has fallen off, but the former position of values is steadily maintained. Saward's *Coal Trade Journal* says: "There are no great stocks of coal upon the wharves, and dealers are only buying as their requirements compel them to come into market. There are orders on the books of every wholesale house in the Anthracite trade, and this keeps the tonnage moving. There is no talk of a decline in prices, and the future of the trade is not regarded with any particular fear, but there is not the snap to business that there would be if the mercury ranged at a lower figure. The West still wants coal, and the Eastern dealers are willing to pay good round freights, so that stocks in that direction cannot be vesy extensive. The domestic sizes are the only grades that are hard to get, and this condition of affairs shows quite plainly that it would be exercising a wise discretion to suspend operations for a week or two, while the temperature holds as it is. Bituminous coals are active, and the increased tonnage that is being recorded is readily absorbed, mainly on old orders, but there are still opportunities to capture an order at an advanced rate. Cumberland is doing better in point of output, and from all accounts there will be more of this quality of coal available next season." Quotations of Lehigh coal at Port Johnson are: Lump, $4.40; Egg, $4.35; Stove, $4.25, and Chestnut, $4. Lackawanna is $3.90 for Lump, $4.05 for Egg; $4.20 for Stove, and $3.90 for Chestnut.

PRICES CURRENT.

NEW YORK MARKET.

Paper Market.

DEALERS' SELLING PRICES.

Ledger and Record	$0.23	@$0.30
Flat Caps, superfines	18	@ 20
Flat Caps, fines	15½	@16½
Flat Caps, engine-sized	11½	@ 14
Blotting, American	13¾	@ 23
Blotting, English	21	@ 25
Book, supersized and calendered	10	@ 12½
Book, super-sized and calendered	9½	@ 10
Book, super-sized and tinted	9½	@ 10
Book, extra machine finish	8½	@ 9½
Book, machine finish, low grade	8	@ 9
Book, No. 1, shavings & imperfections	7½	@ 8½
Book, No. 2, shavings & imperfections	7½	@ 8
News, No. 1	7½	@ —
News, rag and wood	6½	@ 6¾
News, straw	6½	@ 7
Hanging, superfine, No. 1	9	@ 10
Hanging, superfine, No. 2	8	@ 9
Hanging, superfine, No. 3	7½	@ 8½
Hanging, machine satin, No. 1	8	@ 9
Hanging, white blank, No. 2	7	@ 8
Hanging, white blank, No. 3	6½	@ 7
Hanging, curtain	5	@ 6
Hanging, buff	5½	@ 6
Hanging, brown	4¾	@ 5
Colored papers, double mediums	9	@ 9½
Colored papers, glazed mediums	11	@ 12
Colored Papers, tobacco	9½	@ 10½
Colored Papers, tissues, 30×30, ℔ ream	1.30	@ —
Tissues, black, 20×30, ℔ ream	1.40	@ 1.50
White tissue, 20×30, ℔ ream	1.00	@ —
White tissue, 24×36, ℔ ream	1.50	@ —
Manillas, Flour-sack, cream	11	@ 12
Manillas, Flour-sack, drab	10½	@ 11
Manillas, Rope, unbleached	10¾	@ 11½
Manillas, No. 1, light weight	9	@ 9½
Manillas, No. 1, heavy weight	8	@ 8½
Manillas, No. 2	6½	@ 7½
Manillas, Bogus	4	@ 6
Tissue Manillas, full count, weight and size, 11×15, other sizes in proportion	19	@ 20
Hardware, light colored, No. 1	12	@ —
Hardware, No. 1, glazed, tarred	7½	@ 7
Hardware, No. 1, glazed	6	@ 8
Binders' Boards, ℔ ton, No. 1	80.00	@90.00
Binders' Boards, ℔ ton, No. 2	80.00	@70.00
Straw Boards, air-dried, No. 1, ℔ ton	55.00	@ —
Straw Boards, steam-dried, No. 1, ℔ ton	60.00	@ —
Straw Boards, steam-dried, No. 2, ℔ ton	55.00	@ —
Straw Boards, steam-dried, No. 3, State, ℔ ton	50.00	@ —
Straw Boards, air-dried, Penn, ℔ ton	50.00	@55.00
Straw Boards, air-dried, State, ℔ ton	50.00	@60.00
Straw Wrapping, basis, 15×20, 15½ lb. 20 sheets—		
36×40, from 38 lbs. to 42 lbs. ℔ r'm	1.50	@ —
30×40, from 30 lbs. to 34 lbs. ℔ r'm	1.20	@ —
24×36, from 24 lbs. to 26 lbs. ℔ r'm	1.00	@ —
22×32, from 24 lbs. to 26 lbs. ℔ r'm	85	@ 90
20×30, from 14 lbs. to 17 lbs. ℔ r'm	56	@ 60
16×22, from 12 lbs. to 13 lbs. ℔ r'm	45	@ —
18×28	48	@ 50
15×20, from 7 lbs. to 8½ lbs. ℔ r'm	28	@ —
14×18	24	@ —
12×16	22	@ —
11×15	20	@ —
Straw Wrapping, ℔ lb., heavy weight	3	@ 3¼
Straw Wrapping, ℔ lb., light weight	3½	@ 4
Tea Papers, 16-sheet quires—		
12×18	30	@ —
14×20	40	@ —
Card Middles, ground wood	5½	@ 7½
Card Middles, long fibre wood	8½	@ 6½
Card Middles, rag and wood	6	@ 9

Rags, Rope and Bagging.

White Shirt Cuttings, No. 1	6¾	@ 6¾
Mill Assorted Whites	5½	@ —
Unbleached Muslins	5¾	@ 6
City Whites, No. 1	4¾	@ 4⅞
New Canton, Flannels	5¾	@ 6
New Seconds, light	4½	@ —
New Seconds, dark	3½	@ 3¼
No. 2, Whites	2¾	@ 2⅞
Cotton Canvas	4½	@ 4⅝
Linen Canvas, No. 1	4¼	@ 4⅜
Country White Rags	5	@ 5¼
Country Mixed, free of Woolens	2¼	@ 2¾
Seconds (City)	1⅞	@ 1¾
Colors, per 100 lbs	90	@ 1.00
Manilla Rope	3¼	@ 3⅝
Manilla Rope, tarred	2½	@ 2⅝
Gunny Bagging, No. 1	2½	@ 2⅝
Gunny Bagging, No. 2	1⅞	@ 2
Kentucky Bagging	4¼	@ 4⅜
Burlap Bagging, No. 1	2¼	@ —
Tar Shakings	2¼	@ 2¼
Hemp Twine Stock	4½	@ 4¾
Jute Waste	1⅞	@ 2¼

Shavings and Old Paper.

White Collar Cuttings, muslin lined	5½	@ 5⅝
White Envelope Cuttings	5	@ 5¼
Hard White Shavings, No. 1	4	@ 4¼
Soft White Shavings, No. 1	3¼	@ 3¾
Mixed Shavings, part white	2¾	@ 3
Ledger and Writing	3⅝	@ 3¾
Solid Stock	3	@ 3¼
Book Stock, No. 1, light	1¾	@ 2
Old Newspapers	1¾	@ 2
Pure Manillas	2⅝	@ 3⅛
Bogus Manillas and Hardwares	1½	@ 1¾
Commons	75	@ 80
Binder's Board Cuttings	1¼	@ —
Straw Board Cuttings	1¾	@ 1¾

English Rags, &c.

New Cuttings, cotton	6	@ 6¼
Essex Fines	5¼	@ 5½
London Fines, cotton	4¾	@ 5
Outshots, cotton	4	@ 4¼
Seconds	2¾	@ 3
Thirds	1¾	@ 1¾
New Print Tabs	3¾	@ —
Checks and Blues	3	@ 3⅛
Light Prints	2¾	@ 3⅛
Light Fustians	2¾	@ 3⅛
Dark Fustians	2⅜	@ 2½
Black Calicoes	2	@ 2⅛
First Canvas Linen	4¼	@ 4½
Second Canvas Linen	3¼	@ 3¾
Black Bagging	4¾	@ —
Gunny Bagging, No. 1	2⅝	@ —
Gunny Bagging, No. 2	1⅞	@ 2
Mixed Bagging	1¾	@ 1⅞
Burlaps Bagging, No. 1	2½	@ —
Rope, Manilla	3½	@ —
Rope, Manilla, tarred	2½	@ 2⅝
Jute Ropes	2¾	@ 2⅞
Jute Threads	2½	@ 2¾

English Old Papers and Shavings.

Hard Shavings, No. 1	4	@ 4¼
Soft Shavings, No. 1	3¼	@ 3¾
White and Colored Shavings, No. 1	2½	@ 2¾
White and Colored Shavings, No. 2	2¼	@ 2½
Cream Shavings	4½	@ —
Paper-Collar Cuttings	3¾	@ —
Ledgers, Briefs and Letters	3¼	@ 3½
Newspapers and Pamphlets, extra	2⅝	@ 2⅞
Old Newspapers	2⅜	@ 2½
Broken News and Letters	1¾	@ 1⅞
New Books, solid folios	3⅜	@ 3½
Old Blank Books	3¼	@ —
Old Printed Books	3¼	@ —
White and Buff Railway Sheets	2½	@ 2⅝
Railway Tickets	1	@ 1½

Hamburg Rags, &c.

LINENS.

S P F F F	6	@ 6¼
S P F F	5½	@ 5⅝
S P F	4⅝	@ 4⅞
F F	3⅞	@ 4
L F X	3⅝	@ 3½
Extra Fine Blue Linen, light color	4½	@ 4⅝
L F B	4¼	@ 4⅜
Gunny Bagging, No. 1	2⅝	@ —
Burlap Bagging, No. 1	2⅝	@ 2¾

COTTONS.

C S P F F F	4¼	@ —
C S P F F	3½	@ 3¾
C S P F	2¾	@ 3
F R	3	@ —
C C C	2½	@ 2¾
C F X	2	@ 2¼
Extra Fine Blue Cotton	3	@ 3¼
Cotton Canvas	4	@ 4¼

Rope.

T R (tarred)	2	@ 2¼
M R (manilla)	3	@ 3¼
P T R (standing rigging)	3¾	@ 4

Old Papers.

Old Book Paper	3½	@ 3½
Old Printed Books	3¼	@ 3½
Imperfections	2	@ —
White Shavings	3¼	@ 3½
Colored Papers	2	@ 2¼
Writing Papers	3	@ 3¼

Ordinary Leghorn Rags.

P P, No. 1 White Linens	5¼	@ 5⅝
S S, No. 2 White Linens	4½	@ 4⅝
T T, No. 3 White Linens	3¾	@ —
R T, Linen Stripes	4¼	@ 4½
P C, No. 1 White Cottons	4¾	@ 4⅞
S C, No. 2 White Cottons	3¼	@ 3¾
T C, No. 3 White Cottons	2¼	@ 2⅝
B C Cotton Stripes	2¼	@ 2⅝
C C Colored Cottons	2	@ 2⅛

Alexandria Rags.

Whites	2¼	@ —
Blues	2½	@ —
Colors	2	@ —

Memel Rags.

S P F F	4¾	@ 5
S P F	4⅜	@ 4⅝
F F	4	@ —
F G	4¼	@ 4⅜
L F B	4¼	@ 4¼

Trieste Rags.

S P F	4¾	@ —
S F F	4½	@ —
S F X	3¾	@ 4
S F B	3¼	@ 3½

Konigsberg Rags.

S P F F	4¾	@ 5
S P F	4½	@ 4½
F F	3¾	@ 4
L F B	4¼	@ 4½

Japanese Rags.

Whites, ordinary	2½	@ —
Blues, selected	2¼	@ 2⅜
Blues, ordinary	2	@ 2¼
Lime Japans	1¾	@ 1¾

Extra grades ¼c. higher.

Chemicals, Coloring Materials, &c.

Alum, lump	2¼	@ —
Alum, ground	2¾	@ —
Alum, pearl	2¾	@ —
Alum, porous	2¾	@ —
Aluminous Cake, "Elephant"	1.50	@ —
Anti-Chlorine	3	@ —
Bi-Chromate Potash, American	17½	@ —
Bleaching Powders	1.40	@ 1.50
Caustic Soda, 70 per cent	3.42½	@ —
Clay, China, English, per ton	14.00	@20.00
Clay China "Star"	13.50	@14.50
Clay, South Carolina, per ton	10.50	@11.00
Clay, Terra Alba, English, per ton	25.00	@30.00
Clay, Terra Alba, American, per ton	10.50	@11.50
Corn Starch	4⅝	@ —
Copperas, American	1	@ 1¼
Extract Logwood	8½	@ —
Mineral Fibrous Pulp	25.00	@ —
N. Y. Lubricating Co.'s Comp'd, ℔ lb.	10	@ —
Potato Starch	5½	@ —
Prussian Blue, dry	25	@ 55
Prussiate Potash, American	25½	@ —
Orange Mineral	8½	@ —
Rosins, good strained, per bbl	2.85	@ —
Rosins, good, No. 2, per bbl	3.10	@ —
Rosins, low, No. 1, per bbl	3.25	@ —
Rosins, No. 1, per bbl	3.35	@ —
Rosins, good, No. 1, per bbl	3.45	@ —
Rosins, pale, per bbl	3.80	@ —
Rosins, extra pale, per bbl	4.25	@ —
Sal Soda	1.30	@ —
Soda Ash, caustic, 48 per cent	1.62½	@ —
Soluble Blue	57½	@ 65
Spanish Brown, dry	1¾	@ 1¾
Sugar Lead, white	16	@ —
Sugar Lead, brown	9½	@ —
Sulphuric Acid, 66 degrees	2	@ —
Ultramarine, blue	25	@ 30
Venetian Red	1¾	@ —
Vitriol, blue	7½	@ 8¼
Yellow Ochre	1¼	@ 1½

BOSTON MARKET.

Paper Stock.

Mill Assorted Whites	5¼	@ 5¾
Cotton Canvas	4¾	@ 4⅞
Cotton Canvas, No. 2	3¼	@ 3½
Gunny Bagging	2⅝	@ 2¾
Gunny Bagging, No. 2	2	@ 2¼
Shivey Bagging	2¼	@ 2⅜
Waste Woolens	¾	@ 1
Jute Butts	2¾	@ 3
White Collar Cuttings	5¾	@ 4
White Envelope Cuttings	4⅜	@ 4¾
Hard White Shavings, No. 1	4¼	@ 4½
Soft White Shavings, No. 1	3¼	@ 3½
White Shavings, No. 2	2½	@ 2¾
Mixed Shavings (¾ white)	2½	@ 2¾
Imperfections	1½	@ 1⅝
Book Stocks	3½	@ 3¾
Light Prints	1¾	@ —
Manilla Papers, old	2½	@ 2¾
Hardware and Manillas	¾	@ 1¼
Straw Board Cuttings	1	@ 1¼
Linen Canvas	4½	@ 4¾
White Shirt Cuttings	6¾	@ 7
Country White Rags	5¼	@ 5⅝
Country Mixed Rags	2¾	@ 3
City Whites, No. 2	3½	@ 3⅝
Seconds, Country	3¾	@ 4
Colors	1⅞	@ 2¼
Manilla Rope	3½	@ 3¼
Binders' or Tar Board Cuttings	1	@ 1¼
Common Papers	¾	@ 1
Oakum Junk	3¼	@ 3⅝
Hemp Rope, Tarred	2¾	@ 3

English Rags, &c.

Essex Fines	5	@ —
London Fines, cotton	4⅞	@ 5
Outshots, cotton	4¼	@ 4¼
Seconds	2⅝	@ 3
Seconds, extra	3¼	@ 3⅝
Thirds	2¼	@ 2¼
New Print Tabs	3⅝	@ 3¾
Checks and Blues	3¼	@ 3½
Light Prints	2⅝	@ 3
Light Fustians	3	@ 3⅛
Dark Fustians	2½	@ 2⅝
Black Calicoes	1¾	@ 2½
Gunny Bagging, No. 1	2⅝	@ 2¾
Gunny Bagging, No. 2	2¼	@ 2¼
Mixed Bagging	1¾	@ 1⅞
Rope Manilla	3¼	@ 3⅝
Rope Manilla, tarred	2½	@ —
Jute Ropes	2¾	@ 3
Jute Threads	2½	@ —

English Old Papers and Shavings.

Hard Shavings, No. 1	3¾	@ 3¾
Soft Shavings, No. 1	3½	@ 3¼
White and Colored Shavings, No. 1	2	@ 2¼
White and Colored Shavings, No. 2	1¾	@ 2
Cream Post Shavings	4	@ 4¼
Paper Collar Cuttings	3½	@ 3¾
Ledgers	3¼	@ 3¾
Newspapers and Pamphlets, extra	2¼	@ 2¾
Old Newspapers and Pamphlets	2½	@ 2⅝
Broken News and Letters	1¾	@ 1¾
New Books, solid folios	3¼	@ 3½
Old Blank Books	3¼	@ 3¾
Old Printed Books	3	@ 3¼
White and Buff Railway Sheets	2½	@ —
Railway Tickets	1½	@ 1⅝

Leghorn Rags.

P P, No. 1 Linens	5	@ 5¼
S S, No. 2 Linens	4¼	@ —
T T, No. 3 Linens	3½	@ 3¾
P, No. 1 Cottons	4¼	@ 4½
S, No. 2 Cottons	2½	@ 2¾
T, No. 3 Cottons	2½	@ 3¼

Alexandria Rags.

Whites	2¼	@ 2½
Blues	2½	@ 2¾
Colors	2¼	@ 2¾

Smyrna Rags.

Whites	2½	@ 2⅝
Blues	2⅜	@ 2¾
Reds	2¼	@ 2½

Constantinople Rags.

Whites	2⅝	@ 2¾
Blues	2½	@ 2¾
Reds	2¼	@ 2¾

New Papers.

Superfine Book	10	@ 11
Fine Book	9½	@ 10
News, Rag and Wood	7¾	@ 8
News, Straw	7	@ 8
News, No. 1, all rag	8½	@ 9
News, Rag and Wood	6½	@ 6¾
Manilla, Cream Rope	11	@ 12
Manilla, No. 1, Rope	10	@ 11
Manilla, Extra Jute	8½	@ 10
Manilla, Jute and Gunny	8	@ 9
Manilla, No. 2	6	@ 7¾
Manilla, Bogus	4½	@ 6
Hardware, No. 1, tarred	7½	@ 8¼
Hardware, No. 2	7	@ 8
Hardware, red	5	@ 6
Straw Boards, air-dried, ℔ ton	50.00	@60.00
Straw Boards, steam-dried, ℔ ton	45.00	@55.00
Straw Wrapping, heavy

Sugar Lead, white	16	@	17
Sugar Lead, brown	9	@	10
Sulphuric Acid, 66°	1½	@	1¾
Terra Alba, ₩ ton	15.00	@	25.00
Ultramarine, ₩ lb	25	@	30
Ultramarine, W. N. G. brand	22	@	24
Venetian Red, ₩ lb	1½	@	1.60
Vitriol, Blue	7½	@	8
Yellow Ochre	1½	@	1¾

PHILADELPHIA MARKET.

Paper Market.

Extra Super. Calend. and Sized Book	11	@	12
Super Calendered and Sized Book	9½	@	10
No. 1 Machine-Finish Book	8½	@	9
No. 2 Machine-Finish Book	8	@	8½
Rag News	7½	@	8
Straw News	6½	@	7
Manilla Rope, No. 1	12	@	—
Manilla Rope, No. 2	10	@	11
Jute Manilla, No. 1, light weight	9½	@	10
Jute Manilla, No. 1, heavy weight	8½	@	9
No. 2 Manilla	7½	@	8
Bogus Manilla	7	@	7¼
Colored, 24 × 38	8½	@	9
Colored, 20 × 25, super-calendered	11½	@	12
Tissue, white and colored, 20 × 30, ₩ r'm	1.00	@	1.30
Tissue, Manilla, 480 sheets, 11 × 15	20	@	22
Hardware	5½	@	6¼

Paper Stock.

White Shirt Cuttings	6¼	@	6¾
Unbleached Muslins	5½	@	6
Canton Flannels, bleached	5	@	5½
Canton Flannels, brown	4½	@	5
No. 1 Whites	4¼	@	4½
No. 2 Whites	3½	@	3¾
Blues and Thirds	2¾	@	2¾
New Blues	3	@	3½
Colors	1¾	@	1½
Blacks	1¼	@	1½
Overall Cuttings	3½	@	4
No. 1 Cotton Canvas	3¾	@	4
No. 2 Cotton Canvas	3	@	3¼
Hard Woolens	1½	@	¾
White Shavings, Hard	4½	@	4¾
White Shavings, Soft	3¾	@	4
Book Stock	2¼	@	2½
Newspapers	1¾	@	1¾
Mixed Shavings	2½	@	2¾
Broken Prints	⅞	@	1
Manilla Shavings	3½	@	4
Manilla, No. 1	2	@	2½
Manilla, No. 2	1	@	1¼
Flour Sacks	4	@	4½
Binders' Board Cuttings	90	@	1.00
Straw Board Cuttings	90	@	1.00
Common Cuttings, ₩ 100 lbs	5	@	¾
Wadding	2½	@	2¾
Grass Rope	3	@	3¼
No. 2 Tarred Hemp	1¾	@	2
Tarred Shakings	1½	@	1¾
Netting	1	@	—
Hemp Twine	4	@	4¼
Jute Rope	2	@	2¼
Black Hemp Bagging	4	@	4¼
Gunny Bagging	2¼	@	2⅝
Shivey Bagging	1¾	@	2
Scrap Bagging	1½	@	1⅝
Dyed Bagging	¾	@	—
Cotton Mill Sweepings	2	@	2¼

Chemicals, Coloring Materials, &c.

Alum, lump	2¼	@	2¼
Alum, ground	2¼	@	2⅝
Alum, pearl	2¾	@	2⅞
Alum, porous	2⅝	@	—
Alum, potash	—	@	2¼
Aluminous Cake, Blue Star	—	@	1¾
Aluminous Cake, Pochin's	—	@	1¾
Anti-Chlorine	3½	@	4
Bi-Chromate Potash, Scotch	16	@	17¼
Bi-Chromate Potash, American	16	@	17
Bleaching Powders	1½	@	1¾
Caustic Soda, 60 per cent	—	@	4
China Clay, "Star"	13.50	@	14.50
Clay, China, English, per ton	—	@	18.50
Clay, China, Eng., to arrive, per ton	16.00	@	—
Clay, South Carolina, per ton	10.00	@	11.00
Clay, Terra Alba, English, per ton	—	@	22.50
Clay, Terra Alba, American, per ton	10.00	@	15.00
Corn Starch	4	@	4¼
Copperas, American	1	@	1¼
Extract Logwood	9½	@	10½
Potato Starch	5	@	5½
Prussian Blue, dry	32	@	40
Prussiate Potash, American	26	@	28
Orange Mineral	10½	@	12½
Rosins, No. 2, per bbl	2.30	@	2.40
Rosins, good, No. 2, per bbl	2.70	@	—
Rosins, No. 1, per bbl	2.55	@	2.90
Rosins, good, No. 1, per bbl	—	@	3.25
Rosins' pale, per bbl	3.50	@	3.75
Rosins, extra pale, per bbl	—	@	4.00
Sal Soda	1½	@	1½
Soda Ash, caustic	1¾	@	1¾
Soda Ash, carbonated	1¾	@	1¾
Soda Ash, refined	1¾	@	2
Soluble Blue, pure dry	75	@	90
Spanish Brown, dry	90	@	—
Sugar Lead, white	18	@	20
Sugar Lead, brown	9½	@	10½
Sulphuric Acid, 60 degrees	1¾	@	2
Sulphuric Acid, 66 degrees	2	@	2¼
Talcine Fibre, per ton	20.00	@	25.00
Ultramarine, blue	25	@	27
Venetian Red, American	1½	@	—
Venetian Red, "Cookson's," Eng	1¾	@	1¾
Vitriol, blue	7	@	—
Yellow Ochre	1	@	3½

CHICAGO MARKET.

Paper.

Plate	12	@	25
Super-Calendered, white and tinted	10½	@	12
Fine Book, white and tinted	9½	@	10
No. 2 Book	9	@	10
Colored Glazed Mediums	12	@	15
Rag News, No. 1	8	@	8½
Ordinary Rag News	7	@	8
Straw and Wood News	6½	@	7½
Bleached Manilla, No. 1	9	@	10½
Ordinary Manilla	8½	@	9
Bogus Manilla	6	@	7
Straw Wrapping	3	@	3¼
Hardware Wrapping	3½	@	5
Tissue Manilla, 24 × 36, full count	1.25	@	1.50
Tissue, white, 20 × 30	1.10	@	1.25
Tea Papers, 14 × 20	8	@	9
Tea Papers, 13 × 18	8	@	9
Tea Papers, 12 × 16	8	@	9
Straw Boards, air-dried, ₩ ton	60.00	@	70.00
Straw Boards, steam-dried, ₩ ton	50.00	@	60.00
Wood Pulp Card, middles	—	@	—

Rags and Paper Stock.

Whites, No. 1	4¾	@	4¾
Whites, No. 2	3¾	@	3¾
Blues, No 3	2¾	@	2¾
Prints	1¾	@	2
Bagging, No. 1	—	@	3
Mixed Bagging	—	@	3½
Manilla Rope	—	@	3¼
Hemp	—	@	4
Wrapping Stock	—	@	90
Tailor Satinets	—	@	1¾
Book and Ledger Stock	2½	@	2¾
Print Papers	—	@	1¼
Over Issue	—	@	1¾
No. 1 Manilla	—	@	2
No. 2 "	—	@	1¼
White Shavings	—	@	3½
Mixed Shavings	—	@	3
Common Papers, per ton	18.00	@	20.00
Straw Clippings, per ton	—	@	20.00
New Tailor Seconds	—	@	3½
Black Prints	—	@	1½
Overall Duck	—	@	3
Rag Carpet	—	@	1½
Brussels Carpet	—	@	1½
Flour Sacks	4	@	4¼
White Paper	—	@	3

MILWAUKEE MARKET.

Paper.

Plate	16	@	21
Super-Calendered, white and tinted	11	@	12
Fine Book, white and tinted	—	@	11½
No. 2 Book	9	@	10
Colored Glazed Mediums	—	@	14
Rag News, No. 1	—	@	8½
Ordinary Rag News	—	@	9
Straw and Wood News	6¾	@	7¾
Bleached Manilla, No. 1	9	@	10
Ordinary Manilla	8½	@	9½
Bogus Manilla	6	@	7
Straw Wrapping	2¾	@	3
Hardware Wrapping	3	@	3½
Tissue Manilla, 24 × 36, full count	1.00	@	1.25
Tissue, white, 20 × 30	1.00	@	1.25
Tea Papers, 14 × 20	7½	@	9
Tea Papers, 13 × 18	7½	@	9
Tea Papers, 12 × 16	7½	@	9
Straw Boards, air-dried, ₩ ton	60.00	@	65 00
Straw Boards, steam-dried, ₩ ton	50.00	@	60.00
Wood Pulp Card, middles	—	@	—

Rags and Paper Stock.

Whites, No. 1	—	@	4¾
Whites, No. 2	—	@	3.90
Thirds and Blues	—	@	2.80
Prints	—	@	2.40
Manilla Rope	—	@	3
Mixed Bagging	—	@	2.35
Wrapping Stock	—	@	.90
Seamed Cloth	—	@	9½
Wool Seams	—	@	3¼
New Clips	—	@	14½
Soft Wools	—	@	13½
Print Papers	—	@	1.30
Manilla Papers	—	@	2
Common Papers, ₩ 100 lbs	—	@	.90
Tea Paper	—	@	1.00
White Shavings	—	@	3¼
Mixed Shavings	—	@	2½
No. 1 Book	—	@	3
No. 2 Book	—	@	2¼
Straw Board Clippings, ₩ 100 lbs	—	@	.90
Skirted Delaines	—	@	3¾

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WITH
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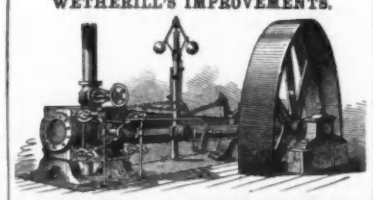

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WANTED—A FIRST-CLASS MILLWRIGHT. One accustomed to Paper Mill work preferred. Address P. O. BOX 2032, New York City.

WANTED—SITUATION AS TRAVELING Salesman to sell Supplies to Paper Mills, or Paper for Mills or Warehouses. Four years on road. Address N. B., BOX 954, Fort Wayne, Indiana.

WANTED—A SITUATION AS FOREMAN BY a reliable man, with a successful experience in making all kinds of Paper. Address H. K. T., office Paper Trade Journal.

WANTED—A SECOND-HAND CUTTING Press; hand or hand and power combined; knife not less than 36 inches. Give particulars and lowest cash price. Address FULTON PAPER MILL, Wheeling, W. Va.

WANTED—FROM RELIABLE PARTIES, thorough and accurate estimates for building a paper mill, and all machinery put up in complete running order—manilla—Fourdrinier machinery, 72-inch; details and site given; references required. Address I. S., office Paper Trade Journal.

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WANTED—A COMPETENT MACHINE Tender; also Rag Engineer. Apply by letter, giving references, to JAMES A. TOWNSEND, Highland Paper Mills, Newburgh, N. Y.

NEWS PAPER OF GOOD QUALITY.
Wanted 1,000 Reams good News Paper. 31½ × 41 in., weight, 48 lbs., 500 sheets to ream. Address with samples and cash price delivered in Philadelphia, Pa., W. W. HARDING, Publisher of Philadelphia *Inquirer*.

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Present product 12 to 15 Tons per week. News and Wrapping. Mills in good running order, and making money.
Twenty-one acres of land; four dwelling-houses; store-room, warehouses, &c.; water-power six months—steam remainder of the year. Coal, two dollars per ton, delivered. Good railroad facilities. Owners having other business requiring their entire attention wish to sell. A bargain for somebody.
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Paper Mill, in complete running order, and now running, situated at Ballston Spa, N. Y., belonging to the estate of the late John McLean; has a Smith, Winchester & Co. 72-inch Fourdrinier Machine; mill is making straw news, and is in a good locality for straw. For further information apply to the executors, GEO. F. PERKINS, 84 Duane St., New York.
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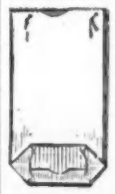

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Adams Improved Satchel-Bottom Flour Sack,
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MACHINE BELTING
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ADVANTAGES.—Much cheaper and stronger than leather. Thoroughly waterproof, and not affected by temperature. Clings well to the pulleys. Runs true, and can be made any length without joints.
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THE ONLY 8-FLANGE SAFE MADE IN THE WORLD.

AND CONTAINING OUR
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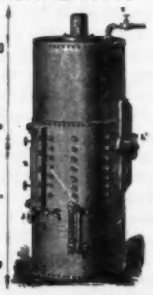

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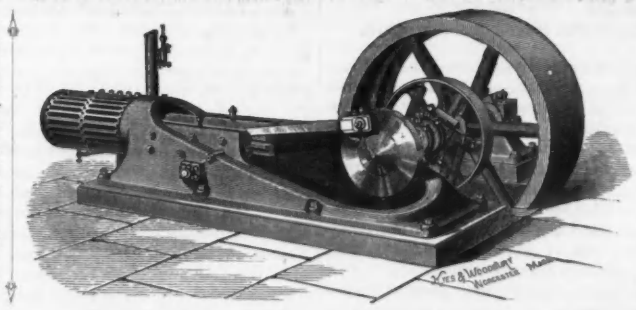

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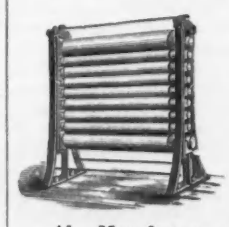

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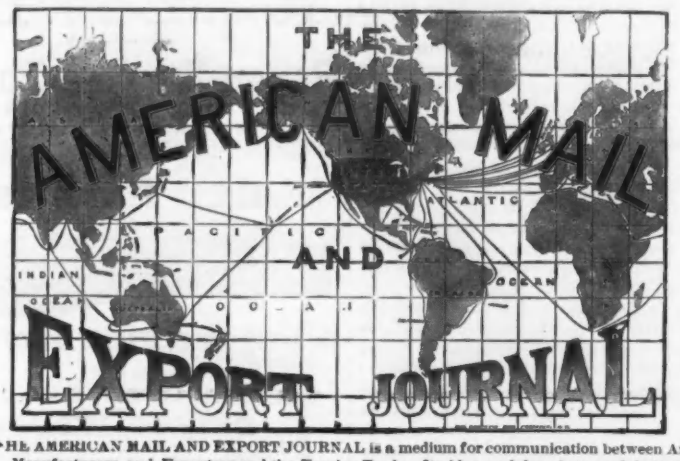

THE AMERICAN MAIL AND EXPORT JOURNAL is a medium for communication between American Manufacturers and Exporters and the Foreign Trade. Its idea and duty is to explain to people of other lands the nature, variety and advantages of American products, whether they come from the soil or the workshop. Its subject matter includes articles upon Engineering and Machinery, Hardware, Textiles, Leather, Glass and Earthenware, Clocks, Watches, &c., Paper, Stationery and Fancy Goods, Metals and Mining, Drugs and Chemicals, Wines and Spirits, Freights, Produce, Provisions, Finance and Investments, and other topics of general interest.

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Evening Star, Dunedin, New Zealand, August 25, 1877.—We think it likely to prove a valuable aid to commercial men.

Japan Gazette, Yokohama, August 27, 1877.—This sample of a new venture gives abundant promise of future excellence.

City Press, London, August 18, 1877.—The articles are well written, and the information on trade matters full and interesting.

Sunderland (Eng.) Daily Times, August 20, 1877.—The idea is a grand one, and the style in which the new venture is got up ought to go far to render it a success.

Paper Makers' Monthly Journal, London, July 31, 1877.—Excellently arranged, admirably printed on fine paper, and illustrated, this new venture looks like succeeding.

Ripponshire Advocate, Beaufort, Victoria, September 22, 1877.—The paper has been got up in a first-class manner, and for a first number is a marvel of completeness and good work.

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Grenville Advocate, Smythesdale, Victoria, September 19, 1877.—The manner in which the journal is got up we have seldom seen excelled, and it is well worth the support of all merchants and manufacturers.

The Citizen, Gloucester, Eng.—It aims, by a system of world-wide agency, to find for the multitude of useful and ingenious American inventions that publicity which is only needed to secure for them a brisk and general demand.

Export Mercantile Advertiser, London, August 7, 1877.—The proprietors propose to themselves the advancement of American trade all over the world, and, doubtless, will do it. We cannot but wish success to our new competitor.

British Mercantile Gazette, July 15, 1877.—Mr. Lockwood's resources in the matter of trade journalism are extensive, but whatever he does he does exceedingly well, and his latest venture does him infinite credit, and bids fair to be a great success.

Bacchus Marsh Express, Victoria, September 22, 1877.—It contains descriptions and illustrations of many novelties which the Americans are always producing, but which cannot be got in these colonies, although they would be as useful here as in America.

Rangoon Times (India), September 1, 1877.—We wish the new venture every success, and without wishing to disparage the work of the "old country," feel bound to confess that in many things the Americans surpass us, and notably so in the manufacture of articles for domestic use.

Bermuda Royal Gazette, Hamilton, October 23, 1877.—"The American Mail and Export Journal" of New York, surpasses the English papers in type, in press work, in rich illustrations, and indeed in general information. Copies of "The American Mail" can be seen at our stationery store.

Civil and Military Gazette, Lahore, India, August 31, 1877.—The promoters believe that American manufacturers do not fully realize the opportunities of increasing their export trade, and the object of the publication is to be a means of communication between American manufacturers and the trade throughout the world.

Deccan Herald, Poona, India, August 22, 1877.—It gives us a vast deal of information regarding things of which we know but little. * * * The paper is evidently in the hands of real go-ahead Americans. Our English merchants had better look sharp, otherwise they will find the foreign market contested with them by American merchants. We think we have said enough to show the character of the new journal, and to serve as a warning to English merchants in regard to the competition with which they are threatened.

Graaff-Reinet Advertiser, Transvaal, Africa, September 4, 1877.—What strikes one on perusing this journal is the extraordinary activity of the American mind and the force with which it is directed to compete with the rest of the world in the industrial arts. * * * The Centennial Exhibition has shown the Americans their manufacturing strength; and emboldened by a comparison of the works of their hands with those of other countries, they now feel themselves able to compete in most things with other nations in the markets of the world.

Jewish World, London, July 27, 1877.—Full of interesting matter, and got up in good style.

El Lautero, Rancagua, Chili, August 4, 1877.—We hope that "The Mail" will receive in Chili the greeting that it really merits.

Mortlake Dispatch, Mortlake, Victoria, September 26, 1877.—We have no doubt that it will be found invaluable to all mercantile men.

Paper and Printing Trades' Journal, London.—The first number is crowded with interesting matter, and there is a goodly show of backbone.

Standard and Mail, Cape Town (Africa), September 18, 1877.—This publication is printed in admirable style, and presents a most creditable appearance.

Public Advertiser, Falmouth, Jamaica, August 27, 1877.—Will prove of great use to those who have or seek to have business relations with that country.

Printers' Register, London, July 6, 1877.—Being exclusively devoted to the export trade of the United States, it is likely to be of value to colonial traders.

Nassau Guardian, July 28, 1877.—We acknowledge with thanks the receipt of a copy of "The American Mail and Export Journal. It is very neatly got up.

New Brunswick Reporter, Fredricton, N. B.—Supplies a want that has much been felt by manufacturers and commercial men in the transaction of business.

Star, Cobourg, Canada, September 19, 1877.—It will also prove interesting to those who take an interest in the trade of the world generally, as it contains reports from all parts of the globe.

Alice Times, Victoria East, August 31, 1877.—It contains everything of interest to importers and merchants and is very useful. Our readers would do well to give us a call and see the new paper.

St. Helena Guardian, September 6, 1877.—We wish the new venture that success it seems to deserve. Any of our readers desirous of seeing the first number can do so on application at our office.

Gippsland Mercury, Sale, Victoria, September 20, 1877.—"The Mail" is excellently printed on toned paper, and will be a great acquisition to commercia circles, among which it will be extensively circulated.

Oxford (Eng) Times, July 25, 1877.—The "get up" is in every way admirable; the finely finished and highly glazed paper, the clear type and engravings, and the well-selected and useful subject matter leave nothing to be desired, and it deserves to succeed.

South Pacific Times, Callao, Peru, August 2, 1877.—That there is a wider field abroad for American manufacturers none will deny, and it only remains to decide when, where and how to enter upon it. To promote this is the object and aim of the new journal.

Daily Press, Hong Kong, China, August 28, 1877.—It would appear from some of the papers that the writers do not consider comparisons are odious, and according to their showing American manufactures can "lick creation," more especially British cotton manufactures.

Cradock Register, (Africa), September 7, 1877.—It is beautifully printed, and contains a very large amount of valuable information from all parts of the world, and must be exceedingly interesting to commercial men. South Africa offers a splendid opportunity for the energetic trader.

Darling Downs Gazette, Toowoomba, Queensland, September 19, 1877.—"The American Mail" is an admirable publication, and a complete compendium of current commercial topics in the United States, and contains also capital concise summaries of business affairs in places all over the world.

Kapunda Herald, Kapunda, South Australia, September 25, 1877.—Special correspondents have been secured in various parts of the world to push the purposes of the paper. We hope that one result of this publication will be an increased trade between America and the Australian colonies.

Panama Star and Herald, October 2, 1877.—It will be seen that a wide field of commercial interest is covered by the new journal, while a glance at the articles under the different heads leads us to the conclusion that it is conducted with editorial ability of the first order. We trust the new venture will meet with the patronage and success it deserves.

The Rising Sun and Nagasaki (Japan) Express, September 1, 1877.—It is exceedingly well got up, is comprehensive in its range, and will be invaluable to commercial men and firms; combining as it does much useful knowledge and information regarding new industrial improvements and inventions and a careful epitome of the state of trade—particularly export—of almost every country and colony in the world.

Holloway and St. Pancras (England) Press, October 27, 1877.—We have before us No. 5 of "The American Mail and Export Journal," published by Howard Lockwood, New York. The foreign memoranda are copious, and great praise is due the editor of "The Mail" for his thoroughly impartial spirit in trade items, and general news from correspondents in almost every part of the globe, who evidently write of things as they find them. As a specimen of printing, "The American Mail" is unrivaled. English traders must look to their laurels if they wish to keep their prestige in the colonial market.

The above are merely brief extracts. Many of the journals quoted have given full column notices to "The Mail and Export Journal" and its mission. Sample copies and further information forwarded upon application to

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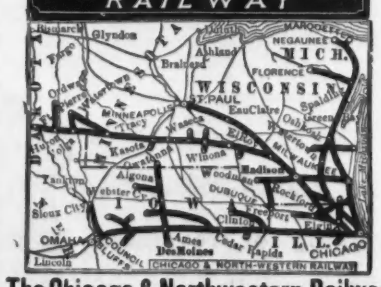

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Paper Mill Insurance.

ANDERSON & STANTON,

GENERAL

Insurance Agents & Brokers,

No. 152 BROADWAY.

New York, May 1st, 1880.

GENTLEMEN:

Feeling the great disadvantage PAPER-MAKERS have labored under for the past few years in procuring good insurance on favorable terms, we were induced to give this class of INSURANCE particular attention, believing that, with the extensive facilities we possess, good paper mills should be looked upon by the Insurance Companies in quite as desirable a light as manufactories of other classes of merchandise. We, therefore, set to work to overcome the feeling that "Paper Mills are burning at the rate of one a minute" (as expressed by one of the leading agents). This prejudice we thought to be unwarranted, contending that good, well-constructed, carefully managed PAPER MILLS could be insured on favorable terms. With this aim in view we determined to make PAPER MILL Insurance one of our Specialties, and have to-day more mills on our books than any other concern throughout the country.

We would ask Paper-Makers to consider these few questions:

First—Should not well and carefully managed paper mills be insured upon better terms than others?

Second—Will not insurance of this character receive better attention and more just and careful consideration on the part of insurance officers, when brought to their notice by parties doing a large business than if sent through some small agent who cannot PERSONALLY represent the facts to his companies?

Third—Are your policies correctly worded, so that YOU ARE POSITIVELY INSURED?

Fourth—Are you sure ALL the companies in which you hold policies are sound and solvent?

These questions we desire to ask you as a paper manufacturer.

Worthless insurance is worse than none. Badly worded policies lead to litigation. Business centres of course have the largest number of insurance companies; hence, better facilities for placing large lines of insurance.

We now have insurance on property valued at some **forty millions of dollars** (**$40,000,000**), including some of the largest and best known paper mills in the United States, and have yet to learn of any paper-maker who has become dissatisfied with our way of doing **business, and we** refer to those with whom we have suffered loss as to the prompt and liberal manner in which the same has been adjusted.

We believe that a well-managed paper mill, where the owners have expended large amounts of money for the protection of their property from fire should receive more consideration from the insurance companies than those of careless construction and indifferent management. **Each risk should be placed on its merits, and the good ones should not be compelled to pay for the poor.**

Should be pleased to send you a Paper Mill Survey, and to hear from you regarding any insurance which you may desire for your mill property, and you can rest assured that it will receive careful attention at our hands. **Please write us before renewing any of your policies.**

Very truly yours,

ANDERSON & STANTON,

INSURANCE AGENTS AND BROKERS,

152 Broadway, New York.

The Storage of Electricity.

(Continued.)

In modern treatises on heat frequent reference is made to an ideal and wholly impossible sort of engine known as Carnot's reversible engine, which is supposed to have the power of being worked backward, not, however, in the engineer's sense of reversing the motion, but in a much more striking sense. Carnot's engine, like every other engine, is supposed to act by heat passing through it from a boiler to a condenser, part of the heat so passing through being converted into work, and the ideal reversibility consists in the suggestion that if the engine could be driven backward by spending mechanical power upon it, the work should be converted back into heat, and the heat should be pumped back from the condenser into the boiler, and from the boiler back into the fuel.

But while Carnot's reversible heat engine exists in the ideal state, we have in the voltaic battery a real reversible engine; for it is possible here to pump back this electric current into our cell, and even to go farther, and to pump into its metallic state the zinc, the fuel which had been consumed in the cell.

Now, while we are thus using currents to separate the zinc from its solution, the zinc is all the while tending to reunite. Its tendency so to reunite—its chemical affinity, so called—manifests itself as a counter-electromotive force; this counter-electromotive force being technically known to electricians under the name of "polarization." The name is not a happy one, but will do if we once understand its meaning. Polarization is the electric reaction at the poles or electrodes of a cell, and is of the nature of a counter-electromotive force. To send a current through a cell, we must apply an electromotive force at least as great as that to which the polarization can attain, or we shall not overcome the tendency of the separate elements to reunite. In fact, it is in overcoming this polarization force that we do the work of storage. We do electro-chemical work by overcoming electro-chemical forces, just as we do mechanical work by overcoming mechanical forces. In every case the storage is effected by overcoming some reaction. If weights that have been lifted, and springs that have been bent, and metals that have been chemically separated, and did not tend to return to their former condition, none of these could serve as vehicles or instruments for the storage of energy. Without reaction, storage of energy would be impossible.

It will next be convenient to glance briefly at the principal laws affecting the counter-electromotive forces of polarization, that is to say, those electromotive forces which are developed by currents at the poles of the cells, and which tend to oppose a reaction to the currents that evoke them.

LAWS OF POLARIZATION.

To tear away an atom of any element from its compound with an atom of another element, requires the use of a definite amount of electricity, and necessitates further that this electricity should be urged forward with at least a certain minimum electromotive force. Take for example the case of the decomposition of water by the electric current. To tear away a single gram of hydrogen from the oxygen with which it is combined, requires no less than 95,050 webers ("coulombs") to flow through. But these liberated and separated gases are, in one sense, a store of energy, and would, if allowed to combine together (by burning), produce heat. Their "affinity" for one another is very great, and the electric current has to do a considerable amount of work in tearing these two kinds of atoms away from one another. To see what this work amounts to, let us inquire how many units of heat they would evolve in burning. Careful measurements by Favre, Andrews and Julius Thomsen, show that 34,000 calories of heat would result. Now the work done to separate the gases is of course equal to the work they would do by rushing together. The affinity of the gases manifests itself as a reaction against the electromotive force of the current employed to separate them. This reaction is itself a counter-electromotive force. When we overcome an opposing electromotive force by pushing a certain quantity of electricity from one point to another against its reaction, we do work just as truly as when we overcome an opposing mechanical force by pushing a certain lump of matter from one point to another against its resistance. In the particular case of the decomposition of water, the opposing electromotive force of polarization has a magnitude when expressed in the proper units of 1.49 volts. It is possible, when we know how much heat would be envolved by the combination of an equivalent of any substance with oxygen, to calculate the amount of the electromotive force that would have to be applied to tear away that substance from its combination with oxygen. Or, again, suppose we know that of two elements one will, when combining with its equivalent of oxygen, give out more heat than another, then we know that it has a greater affinity for oxygen, and from the difference between their "heats of combination," we can calculate the surplus of electromotive force that we should have to apply to tear away one of these two from oxygen, and to put the other in its place.

In the accompanying table are given, firstly, the equivalent heat values of the various metals when oxydized and dissolved in sulphuric acid. In the second column are given the electromotive forces that would be needful to tear away these elements from oxygen, or with which they tend to unite with oxygen—the value, in fact, of the electromotive force which measures electrically the chemical affinity of each of these elements for oxygen.

The order in which these metals are arranged is, in fact, nothing else than the order of oxidizability of the metals (in the presence of dilute sulphuric acid); for that metal tends most to oxidize which can, by oxidizing, give out the most energy. It also shows the order in which the metals stand in their power to replace one another (in a solution containing sulphuric acid). Thus, if copper be put into a solution of platinum, the platinum is reduced, and some of the copper dissolves, evolving heat. If, however, zinc be placed in a liquid containing a copper compound, it displaces the copper, throwing down the latter as a metal and itself dissolving, while its surplus stored energy runs down as heat. In this order, too, the lowest on the list first, are the metals deposited by an electric current from solutions containing two or more of them; for that metal comes down first which requires the least expenditure of energy to separate it from the elements with which it was combined.*

TABLE OF ELECTROMOTIVE FORCE AS CALCULATED FROM THE HEAT OF OXIDATION OF THE CHEMICAL EQUIVALENT (H = 1 GRAM), AND AS OBSERVED BY DIRECT EXPERIMENT.

NAME OF SUBSTANCE.	*Heat Value.*	*E. M. F.*	*Electromotive Force Observed in Dilute Sulphuric Acid.*				
	Calor's.	Volts.	With Oxygen.	With Platinum.	With Ozone.	With Peroxide of Lead.	With Zinc.
Potassium	69,800	3.04	....	3.17 (Bf.) 2.484 (Wh.)	....	3.528 (Wh.)	—1.144 (Wh.)
Sodium	67,800	2.95	....	....	....	....	....
Zinc	42,700	1.862	1.873	1.546 (Po.) 1.439 (Wh.) 1.67 (Bz.) 0.637 (R.)	....	2.448 (Wh.) 2.98 (J.)	0
Iron	34,120	1.570	....	....	....	....	[0.600 (A. & P.)]
Hydrogen	34,100	1.493	?1.64 (Ta.)	0.86 (R.) 0.877 (Bz.)	1.09 (R.) 2.1 (Wh. Po. Sv.) 2.3 (Bf. Ta.) 2.365 (Ba. Bz.)	? 2.78 (Pl.)	....
Lead	25,100	1.133	....	....	....	2.38 (Pl.)	0.21 (A. & P.) 0.55 (D. L. R.)
Copper	18,760	0.818	0.74 (R.)	0.550 (R.)	....	....	0.953 (Po.) 1.079 (L. C.) .978 (L. C.) [0.75 (A. & P.)]
Silver	? 9,000	....	....	....	....	....	1.546 (Po.) 1.439 (Wh.) 1.67 (Bz.) 0.981 (A. & P.)]
Platinum	7,500	0.327	....	0	1.21 (R.) 1.04 (R.)	0.6 (R.) 0.75 (R.) 0.90 (Wh.)	
Carbon	? 2,000	....	....	....	1.435 (L. Swj.) 1.18 (R.)	....	[1.096 (A. & P.)]
Oxygen	0	0	0	....	....	....	
Nitric Peroxide	—6,000	—0.29	....	....	....	....	1.97 (Bf.) 1.95 (L. C.) 1.96 (Sb.)
Chromic Peroxide	—7,195	—0.31	....	....	....	....	2.028 (Sb.)
Mngnese Peroxide	....	....	....	—0.54 (Wh.) —0.101 (R.) —0.128 (R.) —0.404	....	0.504 (Wh.) 0.426 (J.)	1.944 (Wh.) 2.55 (J.)
Lead Peroxide	....	....	....	—0.6 (R.) —0.75 (R.)	....	0	2.448 (Wh.) 2.98 (J.)
Silver Peroxide	....	....	....	—0.90 (Wh.) —0.7 (R.)	....	....	2.1 (D'A.)
Hydrogn Peroxide	—10,800	....	....	—0.86 (R.)	....	....	....
Ozone	—14,800	—0.645	....	—1.04 (R.) —1.21 (R.)	0	....	....

[A., D'Arsonval; Ba., Bartoli; Bf., Buff; Bz., Beetz; L. C., Latimer Clark; D. L. R., De la Rue; J., Joule; L. Lenz; Pl., Planté; Po., Poggendorff; R., Raoult; Sb., Sabine; Sv., Svanberg; Swj., Saweljew; Ta., Tait; Wh., Wheatstone; A. & P., Ayrton and Perry (whose observations, being made with an electrometer for contact in air, are placed in square brackets, as not being, like the rest, observations on the electromotive force in sulphuric acid).

REACTION OF PEROXIDES.

In the preceding discussion, oxygen has been taken as the standard electro-negative substance. But in point of fact there are substances more highly electro-negative; that is to say, substances which when made to combine with a metal such as zinc would give out together a larger amount of heat than zinc does with oxygen. Chief among those substances are chlorine and the haloids, the peroxides of the metals manganese, lead and silver, such peroxidized bodies as chromic, perchloric, and permanganic acids, the peroxide of hydrogen, and ozone. If, for example, zinc be caused to combine with an equivalent of peroxide of lead, more heat is evolved than by the mere oxidation of zinc by free oxygen gas. It is clear then that in the unstable chemical aggregation of the peroxide we have a store of energy which can be utilized in giving us voltaic cells of still higher electromotive force. The highly electro-negative (or oxidizing) property of the brown peroxide of lead was discovered in 1835 by Munck, of Rosenschöld, who describes it as being the most highly electro-negative substance known, being superior even to the peroxide of manganese which Volta found so highly electro-negative. There are, as a matter of fact, several oxides of lead, containing least oxygen of all these oxides; *minium* or red lead, containing a greater proportion; and the *brown* peroxide, with the highest proportion of oxygen, the best conductor and the most highly electro-negative of them. The peroxide of silver is still more highly electro-negative. This power can easily be verified by making a small voltaic cell with a pair of plates, the one platinum covered with a film of peroxide of lead, the other of zinc. One such cell will decompose water, which a copper-zinc pair will fail to do. For to do this requires, as may be seen by the table, an electromotive force exceeding 1.493 volts, this being the measure of the affinity of hydrogen for oxygen. The platinum-zinc pair would have an electromotive force of only 1.044 volts, while that of a peroxide of lead-zinc pair is about 2½ volts.

* The calculation of the figures in the second column (the electromotive forces) from those of the first column (the number of the calories of heat evolved by the oxidation and solution of that amount of the substance that is chemically equivalent to one gram of hydrogen) is effected in a manner originally suggested by Mr. Joule and Sir William Thomson. The number of heat units or calories is ascertained by direct experiment in the calorimeter in the manner familiar in the researches made on heat of combination by Favre, Andrews, Julius Thomsen, and Berthelot. Now, Faraday showed that the qualities of metals concerned in the electro-chemical operations in voltaic and electrolytic cells are proportional to their chemical equivalents; and the later researches of Weber, Kohlrausch, Mascart and Alder Wright have shown that this proportionality can be expressed by a numerical co-efficient, which we may call the "Faraday co-efficient," and which will depend on the unit in which electrical qualities are expressed. If we take the coulomb (or "weber") as the unit of electric quantity, then the Faraday co-efficient is 0.000105, or, in other words, each weber (or coulomb) of electricity which passes through a cell will involve the liberation or combination of 0.000105 grams of that element, whose chemical equivalent is 1, and proportionally more of those whose chemical equivalents are greater. The heat value of the chemical work done by one weber (or coulomb) of electricity, in removing or depositing any metal in any cell, is obtained by multiplying by 0.000105 the figure standing opposite the metal in question in the first column of the table. These heat values are turned into absolute units of work by multiplying by Joule's mechanical equivalent of heat, which is, in the centimetre-gram-second system of units, equal to 41,530,000, or 41.53×10^6. But the work done in moving a unit of electricity against the reaction in a cell measures the power of that cell to react electrically, or, in other words, measures its electromotive force relatively to oxygen, which is taken here as the standard electro-negative substance. These electromotive forces will be expressed in terms of the appropriate of electromotive force, the volt.

MINIMUM ELECTROMOTIVE FORCE FOR CHARGING.

The electromotive force of polarization in a cell, evoked there by the passage of a primary current through it, will depend upon what circumstances are produced at the two electrodes by the passage of the current. In the case of all ordinary liquids and metallic solutions, the products are known.

For each electrotype there is a minimum electromotive force, without which, complete decomposition cannot occur. For water, for example, this minimum is 1.495 volts. If the current be of less electromotive force than this minimum, the action may begin, but the charging current will be stopped the moment the opposing electromotive force of polarization has risen to an equal amount. It is for this reason that in charging a Planté cell, or a Faure cell, we must use at least two cells of Grove's or of Bunsen's battery, or at least three cells of Daniell's battery.

The chemical work that is done in any secondary battery, or electrolytic cell, is proportional to the strength of the charging currents, to the time it lasts, and to the effective minimum electromotive force of polarization in the cell itself. It is not increased by increasing the electromotive force of the charging current much beyond this value; for though a higher counter-electromotive force may be temporarily called out, the work done against this added opposition is wasted in local heat, which is detrimental to the power of the cell. The cells should be charged with only just sufficient electromotive force to overcome their reaction. To charge a Planté cell, two Bunsen cells—not twenty—should be used. The storage will be slower, it is true, but it will be more economical, by far.

STORAGE POWER LESSENED BY HEAT.

Heat diminishes the counter-electromotive force of the cells during charging; it therefore diminishes the amount of chemical work done in charging them, and diminishes the amount of charge thereby stored. Secondary batteries should be kept as cool as possible during charging. A simple experiment in proof of the diminution of polarization by rise of temperature is the following: Let a single Grove's cell be connected with a water voltameter; no gases are evolved until the voltameter is heated to near boiling, when the gases come off freely. Bartoli examined the electromotive force of polarization in a cell containing sulphuric acid with electrodes of platinum, and found it to be twice as great when the liquid was at 5° C. as when raised to its boiling point. Beetz and Robinson have independently investigated the same effect, and their results agree precisely. Beetz found the polarization 2.216 volts at the ordinary temperature of 20° C., and as the temperature was raised it fell off, gently at first, more rapidly afterwards, till at 100° C. it was only 1.904 volts.

Temperature.	E. M. F. (*Beetz.*)	E. M. F. (*Robinson.*)
16° C.	2.216	....
20° C.	....	2.216
30° C.	....	2.194
43° C.	....	2.148
53° C.	....	2.105
57.5° C.	2.101	....
60° C.	....	2.095
80° C.	....	2.040
94° C.	1.960	....
100° C.	....	1.904

(To be Continued.)

R. J. DOWD,
MANUFACTURER OF
Paper Engine Bars

AND BED PLATES,

TRIMMING, RAG CUTTER, STRAW CUTTER
—AND—
Machine Knives of Every Description,
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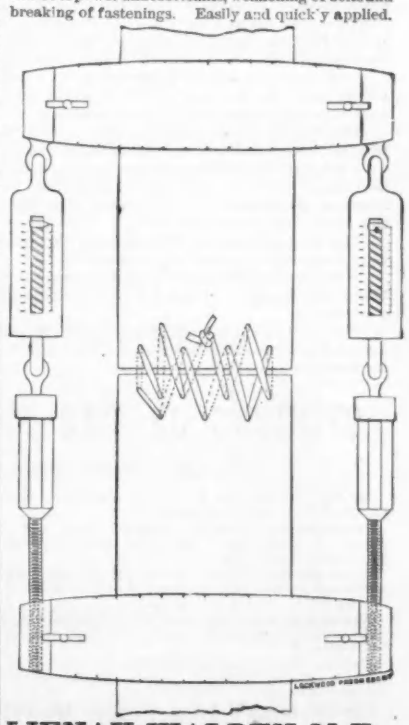
WALDEN'S
Tension Registering Belt-Tightener.
Patented May 3, 1881.
Tightens both sides of a belt alike, puts on any desired tension, prevents friction, slip, backlash, waste or loss of power and lubricants, weakening of belts and breaking of fastenings. Easily and quickly applied.



LIENAU WALDEN, M. E.,
Patentee and Manufacturer,
No. 430 Walnut St., Philadelphia, Pa.

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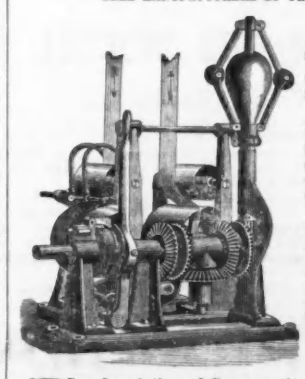
HARTFORD, CONN.,
SOLE MANUFACTURERS OF THE
WEAVER DIFFERENTIAL GOVERNOR
For Water Wheels.



☞ See description of Governor in Paper Trade Journal, page 203, June 12, 1880.

CROCKER Reversible, Self-Packing and Self-Cleansing WATER FILTER

READILY CLEANSED WITHOUT REMOVING FROM CONNECTIONS.

MADE IN SIZES AS FOLLOWS:

10 inches diameter, 1 1-4 inch inlet.
18 " " 2 " "
24 " " 3 " "
30 " " 4 " "
48 " " 6 " "

LARGER SIZES MADE TO ORDER.

Allows a FULL and FREE flow of water without filtration, when desired.

☞ WARRANTED NEVER TO BECOME INOPERATIVE.

This is the only Reversible Filter which can be cleansed by STEAM. Experience proves this to be a matter of the UTMOST IMPORTANCE.

☞ Do not mistake this for any other revolving or reversible Filter similar in appearance.

This is the only Absolutely Self-Packing and Self-Cleansing Filter made.

☞ The Crocker Filter is an Entirely New Invention.
Patented June, 29, 1880, and January 4, 1881.

This Filter is Especially Adapted for Paper Mills,
Bleacheries, Dye Works, Chemical Works, Sugar Refineries, Breweries, Starch Factories, and for Steam Boilers generally.

For further particulars, address
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WATER WHEEL GOVERNOR.

Snow's Latest Improved.

Used by the largest Mills.

Cohoes Iron Foundry & Machine Co., Cohoes, N. Y.

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PIQUA WOOLEN MILLS.

THE F. GRAY CO.,

MANUFACTURERS OF

FOURDRINIER and CYLINDER

FELTS,

FELTS FELTS

Press Felts and Jackets for all kinds of Paper.

Especial attention is invited to our FOURDRINIER FELTS for FAST RUNNING ON NEWS, which are unsurpassed.

ALSO, TO OUR

"EUREKA FELT,"

For Fast Running on Cylinder Machines

Which we have perfected within the last few months, and which is rapidly gaining favor with Paper Makers wherever it is used.

EXTRA HEAVY CANVAS DRYER FELTS, all widths, cut to any length, at Manufacturers' Prices

WE WARRANT EVERY FELT to work well, and if it does not, it can be returned.

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Very respectfully,

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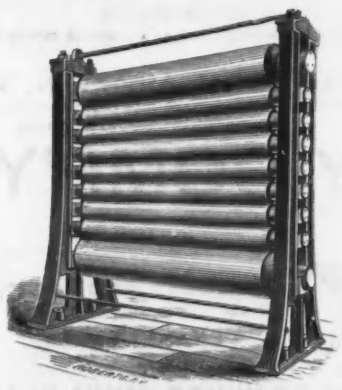
THE J. MORTON POOLE CO.,

Wilmington Delaware.

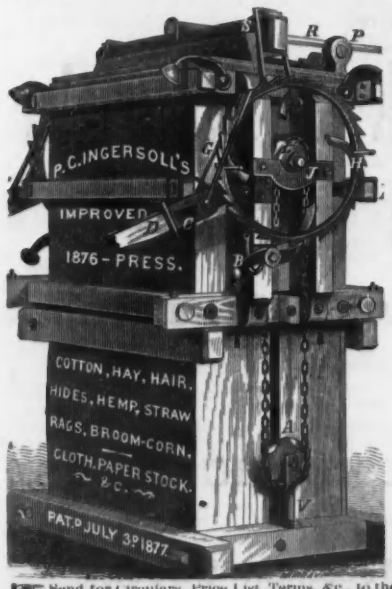


MANUFACTURE

ChilledRolls

GROUND BY THEIR PATENT PROCESS.

PRESSES FOR BALING PAPER, RAGS, &c.



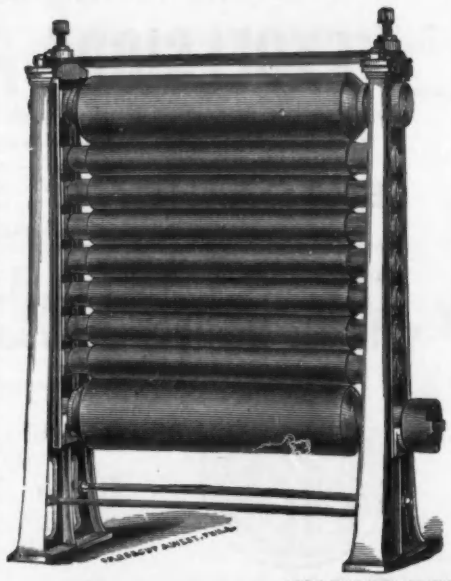
☞ Send for Circulars, Price List, Terms, &c., to the Sole Manufacturer, JAMES N. BALSTON (Successor to Ingersoll & Balston.)

Greenpoint, Kings Co., N. Y.

LOBDELL CAR WHEEL COMPANY,

WILMINGTON, DEL.

The Oldest and Most Extensive Manufacturers of Chilled Car Wheels in this or any other Country.



EXTRACT OF AWARD ON CHILLED ROLLS.

The undersigned having examined the product herein described respectfully recommends the same to the United States Centennial Commission for award, for the following reasons, viz.:

This exhibit contains a stack of calendering rolls intended to be part of a complete paper machine. These rolls are of cast-iron, chilled at the surface in casting, and thereby made hard, like tempered steel. They are separately ground according to a highly improved plan, and are so true that, when placed together, they bear upon each other throughout their entire length. **This exhibit has the exceptional merit that the rolls are not only GROUND true but CAST by the exhibitor.**

(Signed) **JAMES M. WILCOX,**
Signature of the Judge.

ALSO MANUFACTURERS OF

CHILLED ROLLS

For Paper Machines, Rubber, Brass, Copper, Rolling Mills, &c.

The vast quantity of iron used daily in the business of this establishment permits the very best selection for the composition of CHILLED ROLLS. The long experience of Mr. Geo. G. Lobdell in making chilled castings, and who personally directs the selection, enables them to make

CHILLED ROLLS UNEQUALED IN QUALITY AND GROUND AS PERFECTLY AS ANY OTHERS.

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GEO. S. BARTON, Pres. and Treas. LEWIS C. STONE, Manager.

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(At Old Stand of Rice, Barton & Co.,)

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PAPER MACHINERY

OF EVERY DESIRABLE VARIETY,

Iron and Brass Castings, Chilled Iron and Paper Calender Rolls, Rag Engines, Rag Cutters, Steam Pressure Regulators, &c.

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Consisting of Fourdrinier and Cylinder Machines, Washing and Beating Engines, Air-Drying Machinery for Drying Sized Papers.

SOLE MANUFACTURERS of the Jordan Patent Beating Engine, which has no rival for clearing the stock for fine papers. Chilled Iron and Paper Roll Super Calenders, Plate Calenders, Chilled Stack Calenders, Rag Cutters, Hand and Power Cutting Presses and Stop Cutters; the Hatch Patent Stop Cutter, the only Cutter that can be regulated to cut between water marks of writing papers. Screens, Brass and Nickel Plated, the latter warranted to wear twice as long as brass. Bed Plates, Roll Bars, Fan and Plunger Pumps. Also, Gun Metal Covered Rolls, for Size and Press Rolls; Stevenson Water Wheels, Shafting and Mill Gearing generally.

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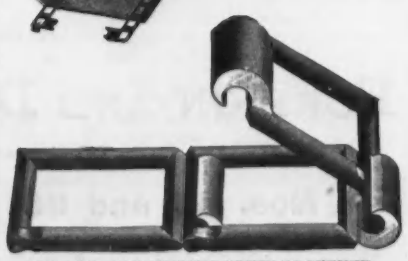
DRYING CARRIERS for Paper and Prints, employing the EWART CHAIN, the best transmitting agent for damp and exposed use, Timed Motions, Rolls, &c.



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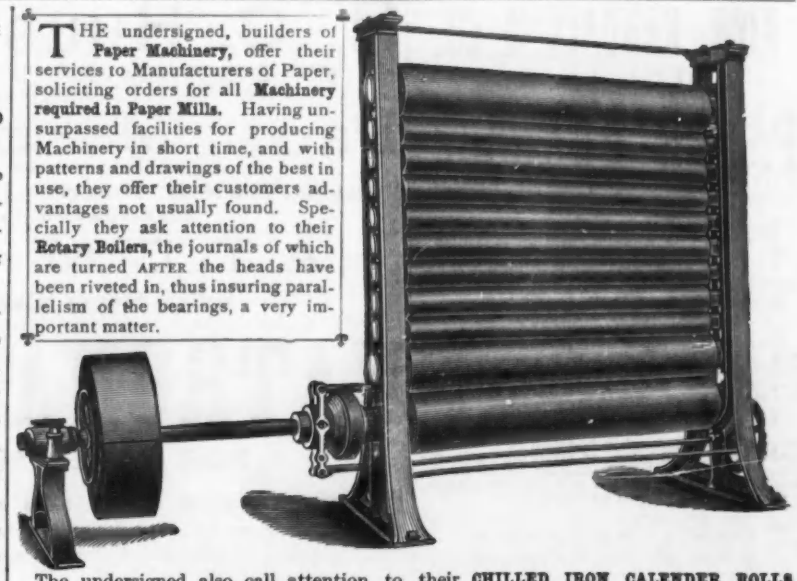
ILLUSTRATED CATALOGUES ON APPLICATION.

THE undersigned, builders of **Paper Machinery,** offer their services to Manufacturers of Paper, soliciting orders for all **Machinery required in Paper Mills.** Having unsurpassed facilities for producing Machinery in short time, and with patterns and drawings of the best in use, they offer their customers advantages not usually found. Specially they ask attention to their **Rotary Boilers,** the journals of which are turned AFTER the heads have been riveted in, thus insuring parallelism of the bearings, a very important matter.



The undersigned also call attention to their CHILLED IRON CALENDER ROLLS, which they guarantee to be ABSOLUTELY PERFECT, both as to hardness and excellence of finish.

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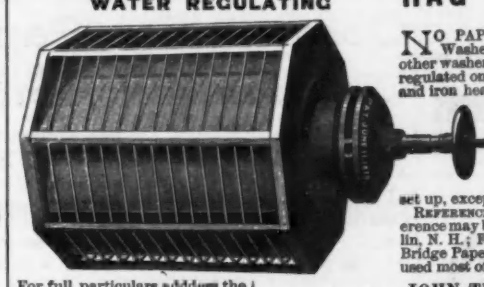

For full particulars address the patentee and manufacturer,

RAG ENGINE WASHER.

NO PAPER MILL can afford to do without this Washer, as it greatly increases the production over other washers in use. It is so constructed that it may be regulated on washer or hydrant. It has copper buckets and iron heads—no wood about it except core and sash, the sash being fastened to the head with brass screws, making it very strong, durable and not liable to get out of repair, and runs with less power than any other washer. Everything furnished complete—water box, hood, racks and pinions for hoisting it out of the engine—ready to set up, except the wire.

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Best Centrifugal Pump

FOR PAPER MILLS.

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IS PRONOUNCED THE BEST FOR PAPER MILLS.

It is made of the best Charcoal Iron. Has No Corners to catch, and will outwear Six Old-Style Square Buckets.

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THE OLD RELIABLE.

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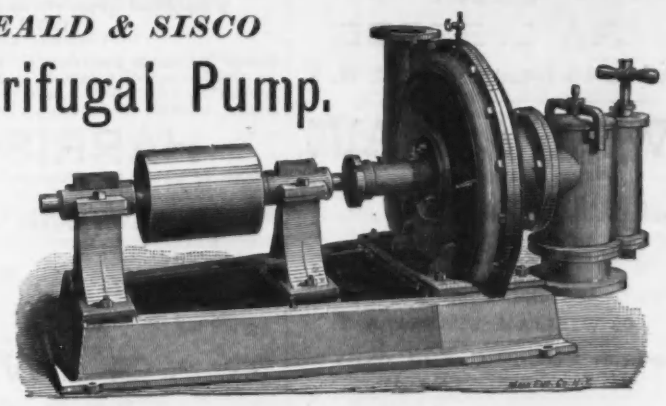
Centrifugal Pump.

Specially adapted to the needs of Paper Makers.



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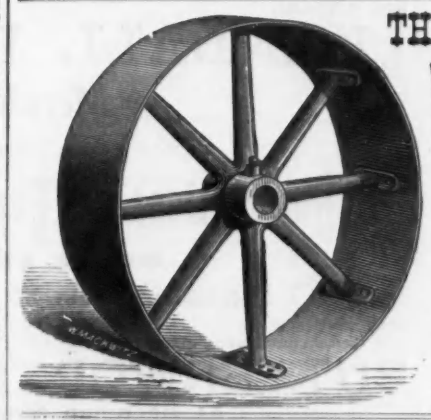

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40 per cent. lighter and 100 per cent. stronger than any cast pulley. No shrinkage strains, perfectly balanced for high speeds, better surface for belts, and

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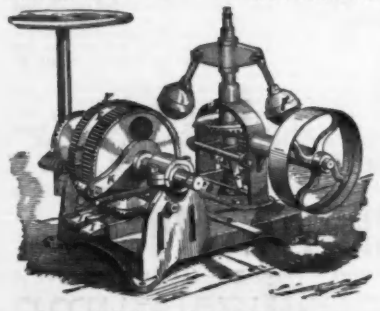

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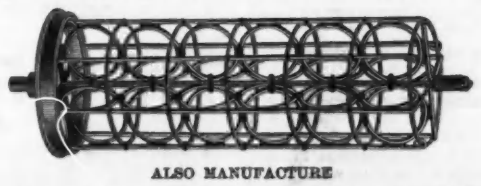

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